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REVIEW OF CALIFORNIA COASTAL PLAN

VOLUME II SUPPORTING DOCUMENTS

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LEGISLATIVE ANALYST

STATE OF CALIFORNIA

925 L STREET, SUITE 650

SACRAMENTO, CALIFORNIA 95814

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California, Legislative Analyst

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"The California Coastal Plan: Alternative Waste Management Strategies for Undeveloped Coastal Areas to Implement the Coastal Water Quality Policies" prepared by ENVIRON/MENTAL.
- C. "The Costs of Local Implementation of the Coastal Plan" prepared by the Office of Planning and Research.
- D. Letter from the Real Estate Services Division, Department of General Services dated February 9, 1976 on the acquisition of development rights.
- E. Letter from the Office of the Attorney General dated December 29, 1975 concerning the doctrine of inverse condemnation.
- F. "Analysis by State Agencies of Individual Coastal Plan Policies" compiled by the Legislative Analyst

(Note: Each of the above Supporting Documents is  
paged separately.)

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ASSESSING THE IMPACT OF THE CALIFORNIA COASTAL  
PLAN ON COMMERCIAL AND RESIDENTIAL DEVELOPMENT

Final Report Prepared for:

The Staff of the Joint Legislative  
Budget Committee

March 1, 1976

Prepared by:

ICF Associates  
437 Lytton Avenue  
Palo Alto, California 94301  
Contract: CJLBC #1



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## INTRODUCTION

### Background

Under Senate Resolution 41, 1975-76 Session, the Legislative Analyst was directed to review and study the California Coastal Zone Plan to determine generally the costs, economic effects, and benefits of the Plan. Subsequently, as a part of the overall effort to comply with Senate Resolution 41, ICF Associates was commissioned by the Legislative Analyst's Office, under a contract with the Joint Legislative Budget Committee, to conduct an initial study of the impact of Coastal Plan policies on residential and commercial development in the coastal zone. This report and its summary, under separate cover, present the results of that study.

### Purpose and Scope

The purpose of this study was to perform an initial assessment of the impact of recommended Coastal Plan policies on residential and commercial developments. Impact is defined as the costs that accrue to a residential or commercial developer in putting his product on the market and benefits that accrue to the public as a result of these costs.

This study does not attempt to analyze the Coastal Plan impact on:

- Industrial developments;
- Large scale commercial developments (e.g., major regional shopping centers);
- Development within areas designated as "special coastal communities or neighborhoods" (e.g., Mendocino, La Jolla); or
- Development beyond the urban fringe but within the Coastal Resource Management Area that would require the conversion of significant amounts of raw land (agricultural or open) to developed land.

The term "subject development" will be used in the remainder of this study to describe a commercial, residential, or combined development that meets the above criteria.

This study does not attempt to analyze the amount of commercial or residential development that might take place under the recommended Coastal Plan policies. Thus, we do not attempt to estimate the number of units of housing or the square footage of commercial space that could

be developed should implementation of the Plan take place.

Instead, this study concentrates on assessing the impact of Coastal Plan policies on potential residential and commercial developments within existing urbanized areas that are within the area defined as The Coastal Resource Management Area in the Coastal Plan. In effect, Policy 59, which calls for the concentration of development within already developed areas; and Policy 32, which establishes "urban boundaries," are assumed to provide the overriding constraints for this study. The term "development area" is used in the remainder of this study to designate areas which fall within the limits and intent of Policies 59 and 32.

This study assesses costs to the developer of residential and commercial developments and benefits to the general public that accrue as a result of these costs, but it is not what is commonly called a "cost-benefit analysis." It differs from a typical cost-benefit analysis in two ways: 1) it does not attempt to relate who pays to who benefits or determine the equity of any imbalance, and 2) it does not attempt to relate levels of costs to progressive levels of benefits. To overcome these differences requires a considerably greater level of effort than is intended in this initial assessment.

#### Methodology

To accomplish the purposes of this project two major tasks were undertaken.

1. Development of a general framework within which to realistically assess impact.

The framework is based on a series of progressively more specific assumptions related to:

- The development area in which subject developments might take place.
- The Coastal Plan policies that apply to subject developments within the development area.
- The specific characteristics of the subject developments against which to assess and realistically illustrate the impact of Coastal Plan policies.

2. Analysis of specific costs that affect subject developments and benefits that accrue from them.

Within the framework developed above, alternative types of developments were analyzed to determine cost and benefits of Coastal Plan policies. Estimates were made of the types of costs that would be incurred. Where data were readily available, these estimates were quantified. Lastly, estimates were made

of the types of benefits that would accrue as a result of each type of development. Where data were readily available, these were also quantified.

Findings and conclusions were developed based on the results of these tasks.

The first task involved a thorough analysis of proposed Coastal Plan policies. It also involved the testing of assumptions concerning development areas and types of developments and interpretations of policies against the judgment of a variety of individuals experienced in the fields of coastal zone planning, land use planning, housing and commercial development, and environmental protection. A brief literature search was conducted and relevant material was reviewed in order to obtain an appropriate perspective on the Coastal Plan and to determine the applicability of related studies to this study.

The second task involved an examination of existing literature on subjects related to: 1) costs of development under coastal zone management and other forms of development control and 2) savings or benefits that accompany various forms of development. In addition this task involved a limited number of interviews of developers, local governmental officials, and planners who are or would be involved in development decisions under the policies of the Coastal Plan.

#### Organization of This Report

This report was prepared in two parts. The first part, a summary, is included as a chapter in the report of the Legislative Analyst to the Legislature under the requirements of Senate Resolution 41. This report presents the complete results of the study in six remaining sections as follows:

- Development area assumptions--presents a set of assumptions about the area in which the kinds of residential and commercial development with which we are concerned will occur.
- Analysis of policies--presents an analysis of the recommended Coastal Plan policies relative to subject developments within development areas.
- Developments within the coastal zone--presents a description of the characteristics of the kinds of development which are likely to occur within the coastal zone under the Coastal Plan.
- Analysis of costs--presents an analysis of costs relative to subject developments that will result from the implementation of the Coastal Plan.
- Analysis of benefits--presents an analysis of the benefits that will accrue to the public as a result of implementation of Coastal Plan policies that affect developments.
- Conclusions--presents the overall findings and conclusions of this study and the limitations placed on their interpretation.

#### DEVELOPMENT AREA ASSUMPTIONS

The first step in the development of an analytical framework is to develop a set of assumptions about the area within which a subject development would be located. The following characteristics define such a geographic area:

- Area Boundaries: The development area is bounded on one side by the coastline and on the other by the Coastal Resource Management Area boundary.
- Land Use and Use Pressures: The predominant land uses in the area are residential and commercial. The area contains a minimum of industrial development, second homes or commercial recreational development. In other words, the area is not generally used for vacation or resort activities or as a major industrial center.

The area is under considerable developmental pressure of two types: first, the area is desirable from a residential standpoint. Housing prices are generally rising, demand exceeds supply, and there is pressure for increasing density. Second, there is increasing pressure for recreational use of the coast primarily on weekends and during the summer months. Such pressure is mostly from the surrounding urbanized area. A minimum of this pressure is created by vacationers or people desiring second homes.

- Existing Development: The area is almost completely developed, consisting of a mix of single family residential housing, low-rise and mid-density multi-family housing, spot and strip commercial and downtown commercial development. Some of the older areas have been privately renovated or redeveloped to higher densities but this has been generally on a haphazard basis. "Completely developed" does not mean that the area is developed in accordance with the maximum densities permitted by the current zoning for the area. Rather, it means that most land is developed to some level.

Structures in the area exhibit a wide range of ages and types with ages averaging between 15 and 25 years. Past development has occurred on generally a grid basis in traditional subdivision fashion. Lots are generally smaller than in developments further inland and the ownership of property is extremely diverse. In general, past development of the area has been largely uncontrolled and determined primarily by economic considerations. The area exhibits a wide range of housing values and neighborhood qualities. Some neighborhoods are very expensive and very well maintained, while others are in general disrepair. People with a wide disparity in income populate the area, though median incomes tend to be higher on the average than in inland communities.

- Utilities and Transportation: The utility infrastructure is in place to serve the existing development. Some utilities, though not all, were developed based on optimistic growth plans and are thus under-utilized. There is a minimum of public transportation within the area. Automobiles are the primary mode of transportation and are generally required for even a moderate degree of mobility and access to points of employment or commercial development. In addition, the area is intersected by streets and highways which carry travelers through the area without an origin or destination in the area.
- Governmental Structure: Generally, the area is contained within the boundaries of a city government, though many local jurisdictions may criss-cross it. The area is most likely a suburb of a larger urbanized area.
- Geography and Scenic Characteristics: The area under consideration is generally flat without a great deal of natural or highly scenic value. The area contains a minimum of valuable natural resources, such as mineral deposits. Historically, the area may have had geographic or physical characteristics of high natural or scenic value but past development has eliminated most of them.
- Public Ownership of Land: There is a minimum of public ownership of land within the area including typical municipal parks and immediate ocean frontage. Some of the beach may be privately owned. Although the beach itself may be publicly owned, access to the beach at peak usage times is restricted by the quantity and type of existing development.

Not all development areas need have all characteristics. In addition, not all of the area within a particular political boundary, a coastal city, or a coastal county, would necessarily qualify as a development area. The following list of coastal areas is provided as an illustration of the communities in which one would find areas that meet the above characteristics. Those areas, from north to south, are as follows:

San Francisco  
 Pacifica  
 Santa Cruz  
 Monterey  
 Santa Barbara  
 Ventura  
 Oxnard  
 Los Angeles coast from Santa Monica to Palos Verdes and Long Beach  
 Orange County coast from Seal Beach to San Clemente  
 San Diego coast from Oceanside to Imperial Beach

## ANALYSIS OF POLICIES

### Application of Policies Within Development Areas

The purpose of this section is to analyze the policies contained within the Coastal Plan to determine the degree of their applicability to a subject development within a development area as described above.

Attempting to sort out 162 policies of a necessarily general plan in a way that classifies each by the degree to which it will affect residential or commercial development is a difficult task. This is so for three reasons: first, the policies are not consistent in their content or specificity. Some policies are statement of goals, others are constraints, others are courses of action, and some represent implementation procedures. In addition, some policies cover subject matter that is extremely significant while others are less so. In general, the relative weight and priority of different policies are not clear.

Second, policies often form a hierarchy in which a series of subsequent policies flow from an earlier policy. For example, Policies 45 through 55 are derived from the goal articulated in Policy 44 "Design development to protect coastal viewshed." In some instances it is most useful to estimate the impact of policies in groups rather than individually.

Third, policies contain varying degrees of ambiguity or uncertainty. In many instances, the intent of policies are clear and the actions or constraints which result from them are fairly obvious. In others, the intent is vague and the potential action or constraint may vary significantly depending on how it is interpreted at the time of implementation.

Despite these problems we have classified all the Coastal Plan policies as: 1) Direct, 2) Indirect, and 3) Not Applicable, depending upon their relationship to subject developments within development areas. Each classification is described in greater detail below.

- Policies that have a DIRECT impact: Policies in this category directly affect subject developments. These policies will require a developer to incorporate planning, design, or construction features into a project that would not be incorporated were the Coastal Plan policies not in effect. This is assumed to be the case even though many of the individual policies may already be requirements in certain local jurisdictions. For example, the policy concerning runoff (No. 14) is an affirmation of existing federal requirements and, as such, may already be incorporated in the regulations of some local jurisdictions. Nevertheless, for the sake of consistency we assume that Coastal Plan policies are not now in force.

There are two different types of direct policies:

- Those that are generally applicable. That is, they affect all developments within the development area.
- Those that are project or site specific. That is, they would only affect certain projects, depending upon the presence of specific features of the site of the subject development.
- Policies that have an INDIRECT impact: Policies in this classification affect all projects on an aggregate basis by affecting the amount or scale of development permitted. The impact on the developer is indirect in that such policies usually require concurrence, approval, or action by governmental authorities prior to the decision to develop. In other words, policies under this classification are likely to affect the decision to develop or not develop rather than the costs of a specific development. At this time it is impossible to determine how these policies will affect a specific development. The ultimate impact will depend largely upon how the policy is interpreted and implemented by local government. For example, the policy concerning watershed management (No. 21) requires the development of local policies and regulations by local governments before an area's capacity for development is established.
- Policies that are NOT APPLICABLE: Policies in this classification are either too broad or too vague to provide a basis for determining the causal relationship between the policy and the impact, or are policies that are totally unrelated to the subject of this study.

Exhibits 1 and 2 summarize the direct and indirect policies. Each policy is identified with respect to its classification, number, and title. Appendix A contains a listing of all the Coastal Plan policies placed within one of the three classifications with a short explanation of the rationale for each classification.

#### Findings and Conclusions Related to Applicable Policies

The analysis and classification of Coastal Plan policies above leads to a number of preliminary findings and conclusions which, in combination, affect 1) the determination of specific development situations to analyze that will provide the most useful information concerning the impact of Coastal Plan policies; and 2) the determination of how specific policies or groups of policies should be applied to these development situations. The two major findings which affect the direction of these later tasks are as follows.



First, the full impact of direct policies will occur in larger developments. The combined "Direct" policies, both those which are generally applicable and those which are site or project specific (see Exhibit 1) are more likely to have an impact the larger the development (say, over 3 acres of land and more than 50 units). Direct policies call for such actions as: providing adequate and unobtrusive on-site parking (Policies 105 and 106), incorporating recreational facilities within the development so as not to increase demand for public facilities (Policy 141), and minimizing the rate and the adverse quality of water runoff (Policy 14). Such requirements are more difficult to incorporate into smaller developments even though some of the direct policies, such as the design requirements (Policies 47-55) could be incorporated into smaller developments.

Second, in determining the impact of policies on subject development, the "Indirect" policies cannot simply be assumed away. The examination of the indirect policies demonstrates that a significant number of individual policies and combinations of related policies could have a major impact on the decision to develop and on the scale of development. Further, the indirect policies not only place a new burden on local land use planning decisions and processes but also are likely to require plan implementation mechanisms which generally are foreign to most local governments. The cumulative impact of the "Indirect" policies, if their intent is ultimately carried out at local level, may well create governmental involvement in the development process that is much more similar to the processes followed under urban renewal programs than those followed in traditional development. One cannot, then, simply assume these policies have been complied with and concentrate only on "Direct" policies.

These findings lead to an interim conclusion that the implementation of the Coastal Plan policies classified as "Indirect" will follow a continuum in which the scenarios described below represent the extremes.

Minimum interpretation and implementation of the policies. A local community meets the minimum requirements intended by the policies. Development occurs within the development area in accordance with constraints and regulations that are little changed from the present. Private development occurs on a small scale, filling in vacant, usually already subdivided, parcels. Some private redevelopment and rehabilitation will take place on a spot basis.

This scenario can occur either as a result of an enthusiastic implementation of policies on the part of a local government or, more likely, as a result of the fact that existing development is acceptable and generally meets the intent of the policies. The San Francisco Sunset District is an example of the latter.

Maximum interpretation and implementation of the policies. The Coastal Plan policies clearly call for more than the minimum effort on the part of local government where development is proposed to be concentrated and where existing development does not comply with the intent of Coastal Plan policies. Under this scenario a local community, financially assisted by other levels of government, conducts the planning and institutes the programs that will meet the policies in the Plan. Local government becomes an active participant in the development process. Plans for redevelopment of appropriate sections of the development area are prepared and programs are instituted to assemble the necessary land, make necessary alterations to the infrastructure, provide permanent and temporary relocation for residents, and prepare the land for development. Developments would be "planned" by local government possibly in cooperation with a selected developer and would likely contain a variety of residential types, including neighborhood commercial. Coastal Plan policies would affect the development from the outset and provide the constraints and guidelines for the development plans. Sections of the cities of Santa Monica, Long Beach, and Redondo Beach, where the Coastal Plan calls for the concentration of development, represent examples of where this scenario might be appropriate.

POLICIES THAT HAVE A DIRECT IMPACT  
ON RESIDENTIAL OR COMMERCIAL DEVELOPMENT

GENERALLY APPLICABLE POLICIES

MARINE ENVIRONMENT

14. Runoff and Coastal Waters Degradation 30231, 30240(b)

COASTAL LAND ENVIRONMENT

43. Coastal Developments and Air Quality 30253(3,4)

COASTAL APPEARANCE AND DESIGN

47. Design Review Process *out*  
 49. Design Guidelines: Compatibility with Natural Environment  
 50. Design Guideline: Coastal View Protection  
 51. Design Guideline: Scale, Height, Materials and Colors } 30251  
 52. Design Guideline: Landscaping  
 53. Design Guideline: Natural Landform Alteration  
 54. Design Guideline: Signs  
 55. Design Guideline: Utility Structures

ENERGY AND THE COAST

72. Energy Conservation in New Developments *out*  
 75. Solar Heating and Cooling Systems *out*

TRANSPORTATION

105. Parking Facilities (30251, 30212.5) 30252  
 106. New Development Parking 30252(4)

RECREATION

141. New Development On-Site Recreation 30252(6)

COASTAL RESOURCES RESTORATION

154. Lot Resubdivision or Consolidation (30607)

SITE OR PROJECT-SPECIFIC POLICIES

COASTAL LAND ENVIRONMENT

- 30240(b) 28. Development Controls Near Significant and Fragile Habitat Areas  
 30007.5, 25006 29. Development to Minimize Habitat Damage  
 30242 34. Criteria for Maintaining Non-Prime Agricultural Lands in Production  
 30241 35. Only Agriculturally Related Development Permitted on Agricultural Lands  
 30241 36. Division of Land Limited in Agricultural Areas  
 30241 37. Development and Land Division Regulation Near Agricultural Areas

COASTAL DEVELOPMENT

- 30253(2) 70. Bluff and Cliff Geologic Safety Regulations

PUBLIC ACCESS TO THE COAST

- 30211 122. Guarantee for Public Access  
 30242, 2110, 211 123. Public Accessways to the Coastline  
 213 126. Coastal Access for Low-and Moderate-Income Persons

COASTAL RESOURCES RESTORATION

- 30251 152. Restore Degraded Coastal Resources  
 (30607) 153. Environmental Damage to be Offset by Restoration

POLICIES THAT HAVE AN INDIRECT IMPACT  
ON RESIDENTIAL OR COMMERCIAL DEVELOPMENT

MARINE ENVIRONMENT

7. Maintain, Manage and Restore Ocean Water Quality

COASTAL LAND ENVIRONMENT

21. Establish Comprehensive Watershed Management
22. Comprehensive Watershed Management Plan Preparation and Implementation
23. Coastal Watershed Management Plans Related to Development and Water Supply Decisions
32. Urban-Rural Boundaries
33. Use Designation of Agricultural Parcels Within Highly Developed Areas
34. Criteria for Maintaining Non-Prime Agricultural Lands in Production
35. Only Agriculturally Related Development Permitted on Agricultural Lands
36. Division of Land Limited in Agricultural Areas
37. Development and Land Division Regulation Near Agricultural Areas
40. Coastal Soil Resources Protection

COASTAL APPEARANCE AND DESIGN

45. Protect Quality of Highly Scenic Areas
46. Local Design Procedures and Standards

COASTAL DEVELOPMENT

59. Development Concentrated in Developed Areas
61. Public Service and Transportation Facilities Regulations
62. Coastal-Dependent Development to Have Priority
65. Statewide Geologic Safety
66. Filing of Geologic Hazards Information
67. Geologic Safety Review and Regulation for New Developments

TRANSPORTATION

101. Land Use Decisions and Transportation Capacity
102. Coastal Road Expansion Criteria
103. Transportation Routes
104. Coastal Road Recreational and Scenic Values
108. Priority of Transit Over New Roads

PUBLIC ACCESS TO THE COAST

121. Coastal Access
122. Guarantee for Public Access
123. Public Accessways to the Coastline
125. Lower-Cost Tourist Facilities
128. Public Access and Institutional Development

RECREATION

131. Coastal Recreation and Resource Protection
132. Oceanfront Land Recreational Potential and Other Uses
133. Commercial Recreation Has Priority Over Private Development
134. Shoreline Areas Reserved for Water-Dependent Recreation
140. Development, Open Space, and Recreation

COASTAL RESOURCES RESTORATION

154. Lot Resubdivision or Consolidation

## DEVELOPMENTS UNDER COASTAL PLAN POLICIES

### Types of Developments

Based on the analysis and interim conclusions of the previous section there are three kinds of residential and commercial development that are most likely to occur under Coastal Plan policies and would be worthwhile to analyze in the remainder of this study. These are characterized generally as "small scale--traditional," "large scale--negotiated," and "large scale--redevelopment". Each is explained below.

#### Small-Scale--Traditional

This type of development is defined as that which could take place within land use, infrastructure, and regulatory constraints that are little changed from present conditions within the development area. This kind of development is compatible with the "minimum impact" scenario discussed above. The development process here is not much different from current or traditional methods; i.e., a developer acquires or obtains an option or a subdivided parcel of a small number of parcels of land, designs a project that meets land use limitations, seeks and obtains governmental approvals, prepares the site, contracts for the construction of the improvement, and sells or rents the end product. The Coastal Plan policies classified as "Direct" affect this development at the time governmental approvals are sought. Governmental involvement is regulatory, ensuring that current land use, design, and construction regulations are met.

A small scale--traditional development can be one of three types: single family, townhouse, or low-rise apartments. It involves usually much less than two or three acres of land developed at densities of less than 20 units per acre. It contains the minimum on-site amenities and requires minimum modifications to public infrastructure (i.e., utilities, streets, and sidewalks, that serve the site). The San Francisco Sunset District is an area where this type of development will likely take place.

#### Large-Scale--Negotiated

This type of development will occur in areas where urban boundaries established under the Coastal Plan will include substantial vacant land area appropriate for development (i.e., of no agricultural value), but that have not yet been developed. Such areas are located on the urban fringe, and, in rare cases, in an already developed area. "Large scale--negotiated" development represents what will occur in the middle of the continuum represented by the minimum and maximum scenarios described in the previous section. If such an area was not covered by the Coastal Plan, development would occur in more or less traditional fashion. However, because of the

combined impact of the policies of the Coastal Plan, the traditional developmental approach will no longer apply. We use the term "negotiated" to describe the process which will replace the traditional development approach under the Coastal Plan. It refers to a process wherein a developer and a local government will arrive at an agreement as to what, how and when development will occur on land controlled by the developer. As interpreted here, the Coastal Plan cannot be implemented through traditional land use control mechanisms such as zoning and building code ordinances. The Plan policies call for a significant degree of latitude in interpretation which will be difficult, if not impossible, to codify. The end result of a "negotiated" development process will be a project which satisfies the minimum economic requirements of the developer and achieves, to the degree possible, the purposes of the combined direct and indirect Coastal Plan policies.

A large scale development would likely be a mix of residential housing types ranging from single-family to high rise. Net density could be higher than small scale developments (over 20 units per acre) and more acreage (at least 5 acres per development site) will be required. Amenities, pleasing design features, and public access, where appropriate, would be included. The Huntington Beach, Newport Beach and Northern San Diego County areas are examples of where such development will likely take place.

#### Large Scale--Redevelopment

This type of development will substantially modify the present characteristics of a development area in which development along the coast is to be concentrated under plan policies. It corresponds to the maximum interpretation scenario described in the previous section. Such development requires alterations to the infrastructure in the form of the relocation, modification and likely upgrading of streets, and utilities. The undertaking of such development depends upon a significant governmental participation and financial commitment from the earliest stages of development. Local government would likely be responsible for such development functions as land assemblage, resident relocation, site clearance, and modification to the infrastructure. At this point, a developer would take over by purchasing the land or development rights from the implementing agency. He would then construct improvements and sell or lease them in accordance with a development plan established by the implementing agency and made a condition of disposition of the land to a private developer. In this manner the implementing agency would be responsible for compliance with plan policies and some or all of the cost of complying with them would be subsidized by the governmental agency.

In such a development the developer becomes a partner of government in the development process. The developer takes over when the ground rules are clear,

and does what he can do best: arrange financing, construct the improvements, and sell or lease what has been built. Examples of communities where such development would likely take place are Santa Monica, Long Beach and Redondo Beach.

#### Interim Conclusions

There are a number of conclusions which are evident as a result of the analysis to this point. These relate to the quantity and timing of each type of development in development areas and the character of such development. Each of these are discussed below.

Quantity and timing of types of development: Assuming that the Coastal Plan is adopted, what can be said about the timing and quantity of each of the three types of development described above? This question cannot be answered in specific quantifiable terms without an area by area analysis and until local areas comply with the sub-regional planning process called for in the plan. Nevertheless, based on our general analysis we can draw a few conclusions. First, it is likely that during the period immediately after passage of legislation implementing the plan, that "small scale--traditional" will be the predominant type of development. During this period local implementation plans will be developed and the development experience will be similar to that encountered during the 1972-74 period in which the current plan was developed.\* Most observers estimate that the development and certification process for local plans will take, on the average, three years.

Second, the "large scale--negotiated" type of development is likely to be much less prevalent prior to the certification of sub-regional plans. Such development will occur but only in instances where the negotiation process has already begun and in areas where it is obvious that the development will not conflict with the expected outcome of the on-going planning process.

After completion of the planning and certification process, "large scale--negotiated" development will accelerate. It will then be the most prevalent type of development until all vacant land identified for such development will have been utilized.

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\*The development experience in the South Coast Region during 1973 and 1974 period supports this point. Mark S. Rosentraub, Robert Warren, and David Gould, Coastal Zone Development and Coastal Policy in Southern California: A Two-Year Analysis of the South Coast Regional Commission (Los Angeles, California: University of Southern California, August 1975).

Third, the "large scale--redevelopment" type of development activity is likely to be minimal during the sub-regional planning and certification process and immediately after certification. However, as land available for the first two types of development is utilized there will be increasing pressure for this type of development. A long term view (10 years) of the impact of Coastal Plan policies must recognize that "large scale--redevelopment" type of development will be the primary method of satisfying developmental demand in areas identified for the concentration of development on the coast.

General character of future development: The two major characteristics of development examined here are housing type and density. Under "small scale--traditional" development these two characteristics will be largely unaffected. This type of development will continue existing densities, and housing types will be little changed from what now exists.

Under "large scale--negotiated" and "large scale-redevelopment" types of development, housing types and densities will be significantly affected. The combined impact of the plan's policies related to air quality, transportation, energy conservation, concentration of development, equality of access and subdivision consolidation, will require that these developments offer a variety of housing types and higher net densities in "planned unit developments." New single-family housing on subdivided lots which typically require net densities of 4 to 7 units per acre will be the least likely housing type to be developed. More likely are mixed developments combining high-rise and low-rise apartments (as condominiums) and townhouses (as fee simple or condominium), achieving net densities for the planned development of 15 to 20 units per acre.



## ANALYSIS OF COSTS

The purpose of this section is to examine the costs of complying with Coastal Plan policies. We will focus on the individual residential and commercial real estate developer. We will also focus on costs to government to the extent that government participates in the development process. We will not examine the governmental costs of developing land use plans or administering regulations which control development.

### Description of Cost Categories

Below seven categories of costs are described which will be analyzed relative to each of the three development types likely to occur under coastal policies and to the policies that affect such developments.

The primary criteria for selecting the cost categories was that they could eventually be measured by empirical study if and when the Coastal Plan policies go into effect. There are a number of other costs related to implementation of Coastal Plan policies that would be extremely difficult to measure and/or to relate solely to the Coastal Plan. These are discussed at the end of this section. The seven cost categories are:

#### Costs to the Private Developer:

Regulation:\* Includes costs related to complying with the regulatory process. It includes such costs as processing fees paid to regulatory bodies, legal fees, engineering study and other consulting fees, performance bond costs, etc.

Delay:\* Includes all costs related to delay caused by compliance with regulations and procedures established pursuant to implementation of Coastal Plan policies. It includes land holding costs such as interest paid on loans to purchase land (or the opportunity cost of using money elsewhere that is tied up in land), taxes, assessments, insurance, and property maintenance. It also includes administrative or overhead costs to the developer incurred while awaiting development. This cost category does not include inflation, since inflation is considered to be a general economic condition that affects both costs and incomes, including the incomes of those who would purchase the products of a developer.

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\*The first four costs are essentially the same as those used in the recent study of the costs and benefits of the California Environmental Quality Act. Report on the California Environmental Quality Act for the Assembly Committee on Local Government, 3 vols., by John T. Knox, Chairman (San Diego, California: Environmental Analysis Systems, Inc., November 1975).

\*\*The cost of delay is the only cost category on which much applicable data currently exists. Most studies appear to concur that, exclusive of inflation, delay costs between  $\frac{1}{4}$  to  $1\frac{1}{2}$  per month in the ultimate price of the end product produced (see Cost of Delay Prior to Construction, Report on the California Environmental Quality Act, and Cost of Environmental Protection listed in bibliography).

Uncertainty: Includes the cost of the loss of potential revenue or actual land value from a project which is abandoned or never is undertaken because of the implementation of Plan policies.

Mitigation: Includes the cost of complying with the requirements of specific policies, such as, alterations to the design of structures, or changes in their location on the specific site.

Scarcity: Includes the costs associated with the reduced opportunities to develop. This cost is reflected in higher land prices or greater difficulty in obtaining or tying up specific parcels for development.

#### Costs to Government as Developer:

Investment: Includes the costs incurred by government (any level) as a result of its participation in the development process. It includes such costs as acquiring land, preparing sites for development, providing lower or moderate income housing, etc.

Compensation: Includes costs to a governmental agency to fully or partially compensate a developer for public access rights, combined public or private facilities, or significant changes in land use which are judged to be confiscatory either by the governmental agency or by the courts. (It should be noted that the latter is currently the subject of public debate and court determination as to when a governmental "take" actually occurs or requires compensation.)

In the following sections, each of these categories of costs are related to the three types of development expected to occur within the development areas and the policies which we have defined as directly or indirectly affecting such developments.

#### Costs Related to Types of Developments

This section relates the seven cost categories above to the three types of development which can be expected to occur within the development areas. This is accomplished in Exhibit 3 which contains a matrix that arrays the types of development against each cost category. The cells of the matrix contain a short explanation of the degree to which the particular cost category will affect costs of the particular type of development. The degree of cost impact in the matrix is described generally at four levels:

None--meaning that the cost category will probably not result in any costs for the particular type of development.

Minimal--meaning that the cost impact is likely to be very minor. For example, a developer may be required to make minor design changes to a structure which he could easily make in the normal course of preparing final drawings.

Moderate--meaning that costs have a measurable impact on the cost of the development, but the cost can easily be absorbed by the developer or passed on to the consumer in the end product. For example, a development which would incur a four to six month delay could absorb the additional three to four percent increase in ultimate prices of the end product he would produce.

Substantial--meaning that the costs of complying with the Coastal Plan policies are of paramount consideration in the development. The cost impact is such that the developer is forced continually to re-evaluate whether or not to continue the development. In some cases, developments are actually abandoned.

From Exhibit 3 it is evident that there are substantial differences between the kinds of costs that one would expect to incur given the kinds of development undertaken. From the standpoint of both the developer and a governmental agency as a developer, the "small scale--traditional" development has the least impact. From the standpoint of the private developer alone, the "large scale--negotiated" has the overall greater impact. From the standpoint of the government as a participant in the development process, the "large scale--redevelopment" type of development has the greatest impact.

From an overall standpoint, "large scale--redevelopment" is the most costly. However, earlier we concluded that this kind of development would be the most likely in the long run and, therefore, we have included an analysis of a hypothetical example of a redevelopment in Appendix B. This example shows how a typical redevelopment would take place and how costs are incurred by the sponsoring governmental agency. In summary, this analysis produces the following conclusions:

- The redevelopment process requires the successful completion of complex functions such as large scale property acquisition (land assemblage), resident relocation, and site preparation. The process can be extremely time consuming; we estimate that a five-year time frame from start to finish may be optimistic for a ten-acre site containing 180 housing units and a small neighborhood commercial facility.
- The cost of redevelopment to government is substantial. In the hypothetical case, it costs approximately \$18,000 per unit to subsidize the redevelopment process to produce 180 units of housing which has an average market value of \$45,000 per unit, 20 percent of which is subsidized for lower or moderate income families, and 15,000 square feet of commercial space valued at \$30 per square foot. The amount of the subsidy is derived by calculating the

difference between the costs of providing a developable site and the low to moderate income housing, and revenue produced by the residual land value to a developer for such a site.

Lastly, we stated earlier that there are a number of costs which, because they are extremely difficult if not impossible to measure, we have not included in the detailed analysis above. However, there are two such costs which deserve mention here. First, there may be a cost associated with the implementation of Coastal Plan policies that relates to the types of developers who will be able to carry on development within the coastal zone. The types of development that we have described favor two kinds of developers: the very large and the very small. The very large developer will be able to participate in the "large scale--negotiated" and the "large scale--redevelopment" types of development. A very large developer who has a number of projects going at one time is able to spread the costs of complying with the Coastal Plan policies over a number of projects. A medium sized developer, who at any time typically has one large project under way and possibly one being planned, will find it extremely difficult to operate under the coastal policies. On the other hand, the very small developer who builds or rehabilitates one or two parcels at a time will be able to survive in the coastal zone by doing "small scale--traditional" development.

Second, another difficult to measure cost is related to the kinds of skills required by developers to carry out the types of development we have identified. It is clear that "small scale--traditional" development will not require very many new skills on the part of the developer. However, the "large scale--negotiated" and the "large scale--redevelopment" require skills that developers today generally do not have. Most developers who could be called successful today acquired their skills carrying out "large scale--traditional" suburban subdivision development. Many are not prepared or equipped to carry on "large scale--negotiated" development. Fewer are skilled in "large scale--redevelopment" which requires the ability to successfully develop in partnership with government. There is a cost associated with established developers acquiring and internalizing new skills and with a different kind of developer coming into this market, but measuring such a cost is extremely difficult.

COST IMPACT BY TYPE OF DEVELOPMENTType of DevelopmentSmall Scale--TraditionalLarge Scale--NegotiatedLarge Scale--RedevelopmentTo Private Developer:

## Regulation

Minimal--some new information will have to be provided, but not a great deal.

Moderate--specific engineering studies will be required. Consultant and legal fees will be measurable.

Moderate--developers of redevelopment projects will have to meet a variety of new requirements, such as more complicated legal arrangements with the governmental agency.

## Delay

Minimal--most requirements could be incorporated into existing procedures.

Substantial--caused by the potential length of the negotiating process. A major cost factor.

None--by the time a developer obtains the site from government, most potential delays should have been overcome.

## Uncertainty

None--once a subregional plan is certified, a developer can be quite certain about what he can and cannot do.

Substantial--some developers will abandon projects because of the uncertainty of the negotiation process. Uncertainty is caused by the large number of individuals and groups who affect the decision-making process.

Moderate--any project carried out in cooperation with a governmental agency produces a certain amount of uncertainty caused by such events as a change in the political environment. Some developers, for this and other reasons, will not participate in redevelopment.

## Mitigation

Moderate--meeting design, parking, site coverage, and similar requirements will increase costs.

Substantial--costs could be high depending upon the site location and the outcome of the negotiation process. Costs could include major changes in design to protect viewshed, on site storm water processing facilities, and the like. See Appendix A.

Minimal--most requirements will be part of the disposition of land agreement with the governmental agency and be reflected as part of the land sale price.

COST IMPACT BY TYPE OF DEVELOPMENT

	<u>Type of Development</u>		
	<u>Small Scale--Traditional</u>	<u>Large Scale--Negotiated</u>	<u>Large Scale--Redevelopment</u>
Scarcity	Substantial--prices of sites appropriate for this type of development will increase as availability decreases.	Substantial--same as under small scale--traditional.	None--land prices will be largely set by governmental agency in order to ensure the appropriate level of development.
To Government:			
Investment	None--requires no additional investment by government.	Minimal--government may participate with the developer in constructing infrastructure or public facilities on or related to the development site.	Substantial--government incurs the costs of acquisition, relocation, site preparation, housing subsidization, and others to bring site to developable level (see Appendix B).
Compensation	None--current sites will not be greatly affected by new land use regulations.	Moderate--depending upon the outcome of the negotiation process, government would be required, or would agree, to compensate for accessways, open space, lower densities, etc.	None--land use decisions are made in the redevelopment process and compensation occurs at time of site assembly.

### Costs Relative to Policies

The purpose of this section is to relate the policies that will have an impact on development to the cost categories defined above. It is not possible to relate individual policies directly to each of the cost categories. In general, costs are potentially created within these categories by combinations of policies. Policies can be analyzed individually only to the extent that they affect the "mitigation" or "compensation" categories of cost.

Below we explain the relationship between each cost category and the aggregate of direct and indirect policies. Appendix A contains an analysis and classification of each of the policies of the plan as they affect residential and commercial developments. The explanations of each classification provide examples of the kinds of mitigation or compensation costs implied by the policy. These specifics will not be repeated below.

Cost categories are related to policies as follows:

Regulation: All direct policies affect the cost of complying with the regulatory process. Some, for example those requiring analysis of geologic hazards, will require developers to conduct site-specific studies. Depending on how the indirect policies are implemented by local government these too could result in specific regulatory requirements. Here it is important to note that the ultimate cost of the regulatory process to a developer (and also to government) will be a function more of how the policies are implemented than of the content of individual policies. A good implementation program could keep such costs relatively low.

Delay: Direct policies affect costs of delay to the extent that the policies are applied to the specific project or development. For example, projects which are adjacent to natural habitat areas will require that a developer invest the time in understanding the relationship between his project and the natural habitat and be able to defend his proposal for preserving the habitat with governmental agencies and in the public forum. Importantly, many of the requirements of the direct policies are already incorporated in the Environmental Impact Review process and to this extent may not cause additional delay beyond that already encountered. Indirect policies will affect delay first because they require an initial period of bringing the local governmental plan and planning processes into compliance with the Coastal Plan. Most knowledgeable observers estimate that this can be accomplished within a three-year period after the enactment of coastal zone legislation. Beyond this period, the combined impact of indirect policies on delay is very uncertain. Again, the degree of impact depends upon the degree to which specific planning issues are resolved in the initial planning process, and the degree to which the implementation procedures can be integrated with existing developmental approvals. In general, however, it is likely that the process will be lengthened as a result of the new Plan requirements.

Mitigation: Direct policies are classified in Appendix A as "direct" primarily because they require a development to incorporate characteristics and features that it might not otherwise incorporate. The types of mitigation actions required are briefly explained in the Appendix. Indirect policies could also affect mitigation but the way in which this might occur is unclear at this time. It can be expected, however, that additional requirements for development would result from the creation of new local plans that are in compliance with coastal zone legislation.

Uncertainty: The combined impact of the indirect policies creates the greatest potential cost of uncertainty. During the process of developing subregional plans, uncertainty will be the highest. Depending upon the outcome of this process (for example, if it results in a very specific definition of what can and cannot be done with specific parcels of land) the degree of uncertainty could be significantly eliminated.

Scarcity: The degree to which the indirect policies are resolved in the subregional planning process will also affect the degree to which scarcity affects the cost of development. During the subregional planning process, land prices will most likely be affected by uncertainty (see above). Once the land use planning issues related to the indirect policies are resolved, then land prices should stabilize. It can be expected that the amount of land designated for development by this process will be less than what is now included within the potential development area. Therefore, the land selected for development will obtain a scarcity value and its price will rise. The determination of what parcels shall be developed and which will not will be the subject both of public debate and speculator interest.

Investment: The impact of the combination of indirect policies and the way these policies are implemented will determine the amount of governmental investment required by a participant in the development process. The most significant policies affecting this cost category are those relating to concentration of development, transportation, and air quality. The amount of investment required will be a function of the extent to which a local jurisdiction actively attempts to deal with these requirements. A "business as usual" approach by local government will not in general achieve the intent of the combination of these policies in areas where development is to be concentrated.

Compensation: The Coastal Plan endorses the policy that land owners should be properly compensated for land which is taken for public use. The direct policies related to ensuring public access to the coast will require compensation for the purchase of right-of-way. The indirect policies may also affect compensation depending upon what



land is ultimately designated as public for open space or recreational purposes. Lastly, there is likely to be disagreement (and possibly court action) resulting from the determination of how privately owned land will be used and whether or not compensation will result.

## ANALYSIS OF BENEFITS

The purpose of this section is to examine the benefits which accrue from residential and commercial developments complying with Coastal Plan policies. Our focus here is the general public or the citizen of the State of California who desires to have access to and the opportunity for enjoying the unique resource of the California coastline. Benefits, then, are presumed to accrue to the "general welfare." As we stated earlier we will not attempt to relate benefits directly to the individuals or organizations which would incur the cost of complying with Coastal Plan policies in residential or commercial developments.

This section will not attempt to address the major overall benefits of the Coastal Plan or Coastal Plan legislation. The major benefits of the Coastal Plan will not be realized through changes in the way residential or commercial development will be carried out, but rather through the Plan's intent to protect the remaining undeveloped portion of this unique natural resource. We will not, therefore, attempt to restate the benefits of conserving natural resources, improving the aesthetics of development in the coastal area, increasing public access to the coastline, etc. These are the benefits of the overall Coastal Plan and they are well articulated in the document itself. In this section we will concentrate on the specific benefits associated with the kinds of development which are likely to occur within the coastal zone under the Coastal Plan policies. Within this context we have identified three specific benefits.

More efficient use of common resources: The concentration of development in already developed areas will, without question, create a more efficient use of common resources. By common resources we mean public infrastructure, such as existing streets, transportation systems, school buildings, etc; public utilities, such as electrical distribution systems, waste water treatment facilities, storm drainage systems, etc; and, established and experienced governmental institutions which provide police, fire, recreation, education, and other public services.

The recent study, The Costs of Sprawl\* illustrated some of these points. The Costs of Sprawl was concerned primarily with alternative types of community development on the "urban fringe." That study concluded that there were substantial developmental and community cost savings associated with concentrating development in higher density housing types (such as high-rise, walk-up apartments, or cluster townhouses) given a fixed land area.

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\*Real Estate Research Corporation. The Costs of Sprawl; Environmental and Economic Costs of Alternative Residential Development Patterns at the Urban Fringe. 3 Volumes. (Washington, D.C.: U.S. Government Printing Office, April 1974).

In other words, it was determined that a high density planned development was approximately 40 percent less costly to the developer and to government than a single-family (sprawl) type of development, given that land area and the number of dwelling units are held constant. This study also found, however, that when one holds the number of units constant and increases density (as is implied in the "concentration of development" policy) that there are also considerable savings. The savings are greatest in construction costs per unit. Typically walk-up or high-rise apartments cost the developer and the local government, who must provide services to these developments, approximately one half the cost of the same number of units of single-family housing. Townhouse development costs fall in between.

Annual operating costs are also lower for higher density development, though the differences are not nearly as great. (For example the governmental operating costs of servicing walk-up apartments is approximately 15 percent less than providing the same services to single-family housing.) Major operational savings for governmental services occur only with high-rise apartments. For high-rise apartment units, governmental operating costs are one-third of that required to support a single-family housing unit.

The applicability of this analysis, however, is limited for this study because it was not concerned with the more efficient use of an existing infrastructure. Typically, local communities have not established balanced levels of service for the wide range of services they provide. For example, one would expect to find (as Sorensen and Dickert found in their study of Half Moon Bay\*) that the capacities of different public utilities and governmental services are based on extremely varied assumptions about future levels of population. To our knowledge, no study has yet been conducted to measure the overall benefit of an "efficient" provision of public services and utilities. By "efficient" we mean that the capacities of all the public utilities and infrastructure are pegged to a consistent and agreed upon level of population. We suspect that there are substantial potential benefits to this approach to providing public services. It is likely that given current high costs of providing governmental services and the growth consciousness of many citizens that such analyses will soon be undertaken and one will be able to quantify this benefit.

The benefit of developing in an area that already has governmental institutions in place to serve a larger population is also difficult to measure. Depending on the local community, some will undoubtedly see this benefit more as a cost. In other words, the development of a new community on the suburban fringe offers an opportunity to start anew and avoid the problems and structural

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\*Thomas Dickert and Jens Sorensen, Sub-Regional Planning Within the Coastal Zone: Half Moon Bay Case Study, Working Outline. (Berkeley, California: University of California, May 15, 1975).

impediments of an existing governmental institution. However, in recent years it has become increasingly expensive to ignore existing governmental institutions and establish new ones. We would suspect, though it would be difficult to quantify, that there are substantial net benefits to capitalizing on established and experienced institutions and working to make these perform better rather than attempting to establish new ones from scratch.

Higher demand for existing and newly developed housing and commercial space. Coastal Plan policies will benefit property owners and developers within the coastal zone in that the policies will, in combination, create a higher demand for what exists and what is built. A higher demand for what exists will encourage those who want to live in the coastal zone to purchase marginal properties and make substantial improvements to them. Developers, whether private developers or governments as participants in the development process, will benefit, in that once a project is approved for development and developed, a substantial demand will exist for the ultimate product. This benefit has the byproduct of providing the "carrot" to ensure that developers will conscientiously comply with the developmental process defined by the implementation of the Coastal Plan. Without the assurance of a high level of demand for the product of development, it would be extremely difficult to implement the kinds of policies called for in the Coastal Plan. This is especially so for offsetting the high public costs and risks of redevelopment.

In all fairness, we must recognize the other side to this benefit. Some would argue that unsatisfied demand will substantially raise housing prices in the coastal zone, contributing to the inflationary spiral in housing and reducing housing opportunities for the lower and moderate income persons. The former may indeed be a cost but it will be hard to separate the impact on housing prices resulting from Coastal Plan policies from the general trend in housing prices given the statewide and nationwide housing situation. The latter can be dealt with and is proposed to be dealt with, in the Coastal Plan, with specific programs. To provide lower and moderate income housing in the coastal zone will require subsidization. (We have identified this cost in our cost analysis section above.)

Increased public voice in development: Under the Coastal Plan policies, the public, both directly and through its governmental representatives, will have a significant voice in development decisions and in affecting the physical makeup of their communities. This can be viewed as a benefit to the extent that the ultimate physical design and appearance of a community benefits all residents and users of the community rather than benefiting an individual developer or the occupants of a specific development. Implementation of the Coastal Plan will surely put major development decisions in the hands of the community which heretofore were dictated by economic incentives as they related to individual developers. This shift away from individual development decisions toward collective development decisions is occurring more or

less rapidly in many communities throughout the country, not only in the coastal zone. However, the Coastal Plan, if implemented, would make this shift complete.

The ultimate extension of this shift in responsibility is characterized above as "large scale--redevelopment" in which the public through its governmental agencies becomes an active participant in the development process. Because of the less than successful history of inner-city redevelopment programs, funded by the Federal Urban Renewal Program, many people express an aversion to this process. However, if the benefit of public participation in the development process is to be fully realized, a redevelopment process (not necessarily an urban renewal process) is a long-range requirement. The challenge is to learn from the past history of redevelopment and to modify and improve the process so that it better serves the public's role as developer. If this can be done, an increased public voice in development will be a significant benefit.

## CONCLUSIONS AND LIMITATIONS

This section of the report summarizes the conclusions of this study and the limitations that must be placed on interpreting the conclusions.

### Conclusions

The following statements summarize the conclusions which can be drawn from the analysis presented above.

#### General Implications of Policies

- The impact of the 28 policies that directly affect subject developments is likely to be greater the larger the development. Small scale development (less than two or three acres and 50 units) will be affected, but in a minor way.
- 35 policies "indirectly" affect subject development within the coastal zone. These policies are primarily the responsibility of local government to interpret and implement. Ultimate costs and benefits of development will be determined by the way they are interpreted and implemented.
- Depending upon the current characteristics of a development area and the way in which policies are implemented, some areas will be greatly affected by coastal legislation (Santa Monica, Long Beach, and Redondo Beach), and some will be minimally affected (Sunset District of San Francisco).

#### Types of Development Under Coastal Plan Policies

- Three types of development are likely to occur under the implementation of Coastal Plan policies. These are:
  - Small scale--traditional: such development will fill in existing subdivided sites with development that is comparable with existing development. It involves the development of two or three individual housing units or a small apartment building.
  - Large scale--negotiated: this type involves development of the large existing undeveloped parcels of land that are determined to be within the "urban boundary." The type of development that will ultimately occur will be negotiated between the developer who controls the land and the responsible governmental agency to ensure compliance with coastal zone policies and to establish the timing of the development.

--Large scale--redevelopment: This kind of development will occur in areas that are identified for concentration of development and where current levels of development are incompatible with Coastal Plan policies and below rehabilitation potential. In this type of development, government actively initiates and participates in the development process in order to achieve the objectives of the Coastal Plan.

- In the short run (five to seven years after approval of the Plan) "small scale--traditional" and "large scale--negotiated" types of development will predominate. But in the long run, the Coastal Plan policies will be achieved only through "large scale--redevelopment."
- "Small scale--traditional" type of development will not greatly affect the character of the development area. On the other hand, "large scale--negotiated" and "large scale--redevelopment" will have to incorporate a variety of housing types and higher net densities in "planned unit developments" to achieve the intent of Coastal Plan policies. Net densities per residential acre, to achieve the objectives of the Plan, must be between 15 and 20 units as opposed to 4 to 7 per acre commonly associated with single family detached housing.

#### Cost Impact of Coastal Plan Policies

- From the standpoint of the private developer and government as a participant in development, the least costly type of development is "small scale--traditional." The developer incurs few costs over present practices and the government merely regulates development.
- From the standpoint of the private developer, the most costly type of development is "large scale--negotiated." Here the developer must make substantial investments in land, development plans, legal fees, etc., which could be jeopardized by the outcome of the negotiation process.
- From an overall standpoint, "large scale--redevelopment" is the most costly to a partnership of private developer and government as a developer. Here the government undertakes the costly responsibilities of land acquisition, relocation, and site preparation for development. In such a development process, government would have to provide subsidy of between 60 and 80 percent of the costs of preparing a redevelopment site. If such a development were to double existing densities, providing housing at reasonable average prices, and, incorporating 20

percent housing for lower or moderate income, then one could expect a governmental subsidy of between 30 and 40 percent of the ultimate value of housing units produced.

- An intangible cost of implementing Coastal Plan policies may be incurred in that very large and very small developers will benefit from the combined impact of the Coastal Plan policies; the former doing "large scale--redevelopment" and "large scale--negotiated" projects, and the latter doing "small scale--traditional" projects. Medium sized developers, who typically can carry out one large project at a time, will find it difficult to develop within the coastal zone.
- Another intangible cost is related to the current level of developer skills. By and large, most developers have little experience with "negotiated" or "redevelopment" kinds of projects. New skills may have to be developed and acquired.

#### Benefits of Coastal Plan Policies

- Implementation of Coastal Plan policies would encourage more efficient use of existing public utility systems; existing public infrastructure, such as streets, storm drainage systems, and school buildings; and would take advantage of established and experienced governmental institutions. The benefits could be substantial given the high cost of expanding governmental services and constructing new infrastructure.
- Coastal Plan policies will ensure a high level demand for existing development and new development. This will be of benefit in that marginal properties will be developed or rehabilitated. In addition, there will be substantial demand for privately or governmentally sponsored new development. High demand will ensure the ability to require developer compliance with policies.
- Coastal Plan policies will provide the public with a substantial voice in the determination of the physical character of their communities. The potential of public participation extends beyond what has been experienced even in recent past. Participation extends beyond merely regulating development through governmental institutions, but actually will place the public through governmental agencies in the role of a participant in the development process.

In summary, the impact of the Coastal Plan on development is to create a new kind of development process in which the public, through its governmental institutions, is involved in the development process, either through negotiation or through actual participation as a developer. Such processes can have significant costs associated with them. However, the potential



benefits to the public are significant. The question of whether or not benefits exceed costs cannot be determined in quantifiable terms; and to a great extent the determination depends upon whether or not governmental institutions at the state, local and regional levels will properly implement Plan policies and assume the responsibilities that they imply.

#### Study Limitations

The purpose of this section is to summarize the limitations that must be placed on the interpretation of the results of this study. Specifically, three factors limited the methodology and affected the degree of specificity of the findings and conclusions. These are explained below.

Empirical data are scarce. Because of the newness of coastal zone planning and management, and state land use planning, there are very little relevant data available for analyzing the impact of policies similar to those contained in the California Coastal Plan. Data which are available relate to the interim permit processing experience during which coastal plans were being developed. Experience under the interim permit process cannot be simply extrapolated to what might occur under the Plan itself. In places, this study uses such data recognizing its inherent limitations.

Empirical data are also very scarce for determining the impact of similar kinds of regulation in areas other than a coastal zone. Such data, where available and appropriate, can be extrapolated to the coastal zone experience. In general, very little recorded experience exists under land use plans that 1) are as comprehensive as the proposed California Coastal Plan, 2) involve the degree of regulation called for in the Coastal Plan, and 3) require multiple governmental levels to participate in the land use planning process. The California Coastal Plan, if implemented, will be unique in the nation, and as it progresses it will be continually breaking new ground. (For this reason, it may be appropriate to consider the establishment of an ongoing evaluation, monitoring and reporting process so that lessons learned from this experience are not lost.)

A consistent base line from which to evaluate the impact of Coastal Plan policies does not exist. During the past ten years, the State of California has been a national leader in advancing more comprehensive and rigorous land use planning at local and regional levels. The land use picture throughout the state is in considerable flux. In many ways, the policies called for in the Coastal Plan could very well become part of local and regional land use policy under current planning law. The degree to which this is or is not so is dependent upon the progress of individual local planning processes. One would find it extremely difficult to establish a base line that represents the current land use planning situation of all communities along the coast. A different situation exists within each community and common denominators are hard to find. For these reasons it is extremely difficult to determine what will result incrementally from implementation of the Coastal Zone Plan.

The study was limited by resource constraints and thus is intended to provide only a preliminary assessment. The time and budget constraints under which the Legislative Analyst's Office carried out its charge under Senate Resolution 41, combined with the extent and comprehensiveness of the proposed Coastal Plan itself, made it impossible to conduct a rigorous study that would produce extensive empirical data to support a series of findings and conclusions. To conduct such a study would have consumed four to five times the resources available for this study and would have taken six months to a year to complete. Nevertheless, this study has intended to provide a preliminary assessment to the extent possible within the existing constraints. Further study of the subject of this study is needed in order to more thoroughly document and test the findings and conclusions contained herein.

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
1. Basic Goals for Coastal Zone Conservation and Development	Not Applicable	This policy expresses the overall subject goals for coastal zone planning. It clearly affects subject developments but is stated so broadly that the relationship between the policy and a development is unclear. Other policies more specifically define the very broad statements of this policy.
<u>MARINE ENVIRONMENT</u>		
<u>Ocean Resources Management</u>		
2. Protect, enhance, and restore marine resources.	Not Applicable	These policies apply directly to ocean life and ocean water quality.
3. Maintain healthy marine organisms populations.		
4. Criteria for aquaculture.		
5. Upgrade commercial fishing facilities.		
6. Expand ocean water quality and research and regulatory program.		
7. Maintain, manage, and restore ocean water quality.	Indirect	This policy requires that waste water treatment be at such a level so as not to degrade ocean water quality. The development of a discharge management program and/or the construction of additional waste treatment facilities could affect the quantity of subject development in the development area.

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
8. Waste water reclamation.	Not Applicable	These policies relate to waste water reclamation and waste discharge from seagoing vessels.
9. Vessel waste discharge regulation.		
<u>Heated and Cooled Discharges</u>		
10. Avoidance of adverse effects of thermal discharge and entrainment.	Not applicable	This policy applies to the discharges from industrial facilities only.
<u>Oil and Toxic Spills</u>		
11. Oil and Toxic substance release prevention.	Not Applicable	These policies apply to oil and toxic substance spills in ocean waters.
12. State oil spill liability measures.		
13. National oil spill liability fund.		
<u>Runoff</u>		
14. Runoff and coastal waters degradation.	Direct, Generally Applicable	Implementation of this policy will directly affect subject developments. The policy requires that subject developments be planned and designed in a way that will minimize runoff and ensure that that runoff does not contain substances or materials that would degrade coastal waters. The policy could require such actions as minimizing lot coverage, constructing storm water control and treatment facilities on site or contributing to public construction of holding and treatment facilities.

ANALYSIS OF COASTAL PLAN POLICIES

Policies	Classification	Explanation
Coastal Waters, Estuaries and Wetlands		
15. Special estuary and wetland protection.		
16. Limit dredging, diking, and filling to protect other coastal waters.	Not Applicable	These policies are concerned with protecting estuaries and wetlands and controlling, dredging, diking, sea wall construction and sand supply. They generally do not apply to the subject developments within the development area.
17. Replacement areas required for diked or filled areas.		Policy 19 probably represents the limits of the "not applicable" category as defined here in that one could envision a development which proposed a structure that directly affected the beach or protruded into the ocean.
18. Regulation of permitted dredging.		In such a case this policy would be applicable. However, the continued thrust of other policies makes the occurrence of such a situation very remote for subject developments.
19. Seawall, breakwaters, and shoreline structures criteria.		
20. Positive programs to restore sand supply.		

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
<u>COASTAL LAND ENVIRONMENT</u>		
<u>Coastal Streams and Watershed Management</u>		
21. Establish comprehensive watershed management.	Indirect	These policies can be taken together and viewed as a group. Policy 22 carries out Policy 21. Policy 23 specifically applies Policy 21 to development. These policies taken together establish limits on the quantity and type of development to go on within a development area. They create a governmental responsibility to develop a watershed management plan and use that plan to control the quantity and type of development within the development area.
22. Comprehensive watershed management plan preparation and implementation.		
23. Coastal watershed management plans related to development and water supply decisions.		
24. Review of major projects affecting coastal streams.	Not Applicable	These policies apply primarily to the preservation and maintenance of coastal streams and the life within them.
25. Special protection for anadromous fish streams.		
<u>Natural Habitat Areas</u>		
26. Significant natural areas and rare species preservation.	Not Applicable	These policies apply generally to existing natural areas with contain animal and wildlife habitat.
27. Fragile habitat areas protection.		

Appendix A (Continued)

ANALYSIS OF COASTAL PLAN POLICIES

Policies	Classification	Explanation
28. Development controls near significant and fragile habitat areas. 29. Development to minimize habitat damage.	Direct, Site Specific	These policies can be taken together as affecting subject development. But they only affect those developments which are adjacent to habitat areas.
<u>Agriculture</u>		
30. Protect agricultural economic viability. 31. Statewide programs for maintenance of agricultural lands.	Not Applicable	These policies apply to statewide agricultural policy in areas of agricultural economic viability and maintenance of statewide agricultural lands.
32. Urban-rural boundaries. 33. Use designation of agricultural parcels within highly developed areas.	Indirect	These policies can be taken together in that they establish boundaries for urban expansion and designate the use of agricultural parcels within and adjacent to urban boundaries. These policies are a significant governmental responsibility. They affect subject developments by placing limits on the location of developments and creating pressures on increasing the usage of already developed parcels or parcels available for development.

ANALYSIS OF COASTAL PLAN POLICIES

Policies	Classification	Explanation
<p>34. Criteria for maintaining non-prime agricultural lands in production.</p> <p>35. Only agriculturally related development permitted on agricultural lands.</p> <p>36. Division of land limited in agricultural areas.</p> <p>37. Development and land division regulation near agricultural areas.</p>	Indirect/Direct, Site Specific	<p>These policies can be taken together in that they affect the kinds of development that can go on within the urban boundary on or adjacent to agricultural land. These policies have the effect both of requiring public action to determine whether or not the lands will be permitted to be developed and if so the kinds of development that will be permitted. In addition, these policies could affect specific projects in that they may be applied on a project-by-project basis in order to determine if there is economic or other justification for the conversion of agricultural or open space land to a developed use.</p>
<u>Forestry</u>	Not Applicable	<p>These policies establish criteria for using and maintaining forest resources. If developed areas were adjacent to forests then these policies would have the same effect as those applying to agriculture. Since this is not the case, these policies are classified as not applicable.</p>
<u>Soil and Mineral Resources</u>	Indirect	<p>This policy requires that the local governmental agency determine what kinds of building and grading can be carried out within the development area that would have a minimum impact on depletion or degradation of existing soil conditions.</p>
40. Coastal soil resources protection.		



ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
41. Mining regulations.	Not Applicable	These policies apply to mining regulation and control of mineral deposits which have been assumed not to exist within development areas.
42. Mineral deposits inventory.		
<u>Air Quality</u>		
43. Coastal developments and air quality.	Direct, Generally Applicable	This policy directly affects the design and operation of subject developments in order to ensure minimal adverse affect on air quality. It is aimed at both direct and indirect sources of potential air pollution. The policy could affect development in numerous ways such as requiring phased development commensurate with public transit improvement, project design to encourage pedestrian or bicycle traffic over automobile, reduction in parking spaces per unit to encourage use of public transit or off-site parking using shuttles to and from the site.

COASTAL APPEARANCE AND DESIGNCoastal Viewshed

- |  |                 |  |
|--|-----------------|--|
| 44. Development design and coastal viewshed. | Not Applicable. | This policy will affect the subject developments within the development area but this statement of the policy is too broad to interpret by itself. The policy is made more specific by policies 45 through 56. |
|--|-----------------|--|

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
45. Protect quality of highly scenic areas.	Indirect	This policy is classified as having an indirect impact on subject developments even though in defining the development area we assumed a minimum of highly scenic qualities. The determination of what is highly scenic will require governmental action prior to determining the amount, location, and scale of development within the development area.
46. Local design procedures and standards.	Indirect	This policy establishes design standards and procedures that local government will follow in reviewing development projects to determine if a proposed development project meets established standards. The process, as a governmental responsibility, has an indirect impact on subject developments.
47. Design review process.	Direct, Generally Applicable	This policy establishes the procedure to implement Policies 49 through 56 below and in combination with them have a direct affect on subject development.
48. Litter reduction in coastal areas.	Not Applicable	This policy applies to the implementation of a statewide litter control program and does not apply specifically to subject developments.

ANALYSIS OF COASTAL PLAN POLICIES

Policies	Classification	Explanation
Design Guidelines for Viewshed Development		
<div> <p>49. Design guidelines: compatibility with natural environment.</p> <p>50. Design guideline: coastal view protection.</p> <p>51. Design guideline: scale, height, materials and colors.</p> <p>52. Design guideline: landscaping.</p> <p>53. Design guideline: natural landform alteration.</p> <p>54. Design guideline: signs.</p> <p>55. Design guideline: utility structures.</p> <p>56. Design guideline: major public service, commercial, and industrial facilities.</p> </div>	<div> <p>Direct, Generally Applicable</p> <p>These policies represent the specific standards of the design review process called for in Policies 46 and 47 above. These guidelines have a direct impact on each project in that they affect the materials used in construction, etc.</p> </div>	<div> <p>Not Applicable</p> <p>This policy establishes design guidelines for major commercial and industrial facilities which are not within the definition of subject developments.</p> </div>
<u>COASTAL DEVELOPMENT</u>		
<u>Development Affecting Natural Resources</u>		
57. Development to complement natural and scenic resource areas.	Not Applicable	This policy applies to development outside the development area (non-urbanized areas).

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
Special Coastal Communities and Neighborhoods		
58. Protect and enhance special coastal communities and neighborhoods.	Not Applicable	The development area has been assumed not to be a "special community or neighborhood."
Development Concentrated in Urban Areas		
59. Development concentrated in developed areas.	Indirect	This policy clearly affects development. It depends primarily on public decisions related to land use planning and implementation. The policy will require governmental land use decisions which will affect the total amount, scale, and location of development within the development area.
60. Rural land division criteria.	Not Applicable	This policy affects the division of land in rural areas--not the subject of this study.
61. Public service and transportation facilities regulations.	Indirect	This policy is aimed at local governmental land use planning and regulation. It requires that local government provide balanced levels of public utility service and transportation facilities to support the level of development and population called for within local plans. This policy is aimed at establishing a balance between public facilities and ultimate development as a means of both minimizing wasteful overcapacity of facilities and ensuring appropriate limits to overall development and population.

ANALYSIS OF COASTAL PLAN POLICIES

Policies	Classification	Explanation
62. Coastal-dependent development to have priority.	Indirect	This policy is aimed at local governmental land use planning and regulation. It calls for priority to be given to coastal-dependent development over other kinds of development. It requires local governmental decisions before the location, scale, or quantity of subject developments can be determined.
63. Industrial development location criteria.	Not Applicable	This policy applies to local land use planning criteria for industrial development location. It is not applicable to the subject development.
<u>Hazardous Areas</u>		
64. Flood hazard areas development restrictions.	Not Applicable	It is assumed here that federal flood control legislation currently being implemented is adequate and that this policy is therefore redundant.
65. Statewide geologic safety.	Indirect	These three policies can be taken together as a statement of geologic hazard policy and the regulations to implement that policy. Most of the development areas identified within which subject development could take place are in areas that are subject to geologic (earthquake) hazard. The determination of limits and controls on development is a governmental responsibility which can affect the scale, location, and amount of subject development in the development area.
66. Filing of geologic hazards information.		
67. Geologic safety review and regulation for new developments.		

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
68. No public subsidy for hazardous developments.	Not Applicable	This policy relates specifically to one means for implementing geologic hazard policy.
69. Safety measures for tsumami occurrence.	Not Applicable	This policy requires local community development of safety measures for tsumami occurrences within the 100-year tsumami runup zone.
70. Bluff and cliff geologic safety regulations.	Direct, Site Specific	This policy calls for specific site analyses for subject developments occurring on bluffs and cliffs. The purpose of the analyses is to determine the geologic stability of the site to both avoid destruction of cliffs and bluffs and ensure safety of the development.
<u>ENERGY AND THE COAST</u>		
<u>Energy Conservation</u>		
71. Restructure utility rates to encourage energy conservation	Not Applicable	This policy applies to establishing utility rates which encourage energy conservation.
72. Energy conservation in new developments.	Direct, Generally Applicable	This policy directly affects subject developments within the development area. It calls for project designs which minimize energy usage and implements this policy by calling for energy budgets on new developments.
73. Additional energy conservation recommendations	Not Applicable	This policy applies to a general statewide energy conservation program. To the extent that the recommended policies are implemented on a statewide basis the policy would affect all development equally and not be peculiar to the coastal zone.

Appendix A (Continued)

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
<u>Alternative Energy Sources</u>		
74. Development of alternative energy sources.	Not Applicable	This policy calls for the statewide development of alternative energy sources.
75. Solar heating and cooling systems	Direct, Generally Applicable	This policy calls for the advancement in the use of solar heating and cooling systems. Specifically, it affects subject developments in that it requires structural and design capability to convert to solar energy usage when such systems are economically viable.
<u>Energy Facilities Siting and Design</u>		
76. Statewide agency to plan and certify energy facilities.	Not Applicable	This policy applies to statewide control of energy facility siting.
<u>Power Plant</u>		
77. Coastal agency role in power plant siting.	Not Applicable.	These policies apply to the Coastal Agency role in power plant siting, site identification, design and the removal of power plants from coastal areas.
78. Ongoing site identification.		
79. Siting and design criteria.		
80. Outmoded power plants on beaches.		

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
<u>Petroleum Development</u>		
81. Offshore petroleum development.	Not Applicable	These policies call for regulation of petroleum related development, exploration, and production.
82. Petroleum exploration and production.		
83. Petroleum facilities siting and design criteria.		
84. Oil recovery efficiency.		
85. Exploration and production data.		
86. Federal OCS petroleum development.		
<u>Refineries</u>		
87. Refinery siting.	Not Applicable	These policies apply to refinery siting and design criteria.
88. Coastal refinery siting and design criteria.		



ANALYSIS OF COASTAL PLAN POLICIES

Policies	Classification	Explanation
<u>Tanker Terminals</u>		
89. Tanker terminal planning.		
90. Tanker terminal siting.	Not Applicable	These policies apply to tanker terminal planning, siting, and operations.
91. Existing tanker facilities.		
92. Criteria for new or enlarged terminals.		
93. Tanker technology and operations.		
<u>Liquefied Natural Gas (LNG) Facilities</u>		
94. LNG facility siting.		
95. LNG facility siting and design.	Not Applicable	These policies apply to the siting, design, and operation of LNG facilities.
96. LNG marine operations.		
97. LNG on-shore facilities.		
98. Liability for accident damage.		
<u>TRANSPORTATION</u>		
99. Coastal concerns in transportation plans.	Not Applicable	These policies call for the involvement of the coastal agency in transportation planning in local and regional areas. The administrative structure and the governmental interrelationships established for transportation planning are not the subject of this study, although the content of transportation policy is. Later policies dealing with funding or administration of transportation are also classified as "not applicable."
100. Transportation plans and coastal resources.		

ANALYSIS OF COASTAL PLAN POLICIES

Policies	Classification	Explanation
<u>Land Transportation</u>	Indirect	These policies can be taken together as a group in that they affect the relationship between land use and streets, roads and highways. The policies call for relating land use decisions to public road capacity, establishing criteria for coastal road expansion, minimizing transportation routing through coastal zone areas and preserving the scenic value of Highway 1. These policies are aimed at the local government decision-making process related to land use planning. In combination, they affect the scale, location, and the amount of subject development that can go on within the development area.
101. Land use decisions and transportation capacity.		
102. Coastal road expansion criteria.		
103. Transportation routes.		
104. Coastal road recreational and scenic values.		
<u>Parking</u>	Direct, Generally Applicable	These two policies combined affect all subject developments. They require that parking facilities be planned, designed, and constructed in as tasteful and unobtrusive manner as possible, while at the same time providing adequate on-site parking for new developments.
105. Parking facilities.		
106. New development parking.		
<u>Public Transit</u>	Not Applicable	This policy applies to priorities given to and the means of funding transit needs.
107. Coastal zone transit funding.		

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
108. Priority of transit over new roads.	Indirect	This policy relates to local transportation planning and implementation and is closely related to the street and highway planning required under Policies 101 through 104.
109. Transit in urban areas.	Not Applicable	These policies spell out the means by which local transportation plans will be implemented.
110. Rail service.		
111. Transit usage.		
<u>Air Transportation</u>		
112. Future airport siting.	Not Applicable	These policies apply to air transportation within the coastal zone.
113. Coastal airport expansion.		
114. Public access in airport buffer land.		
115. Air-related transportation and coastal access.		
<u>Water Transportation</u>		
116. Major port areas.	Not Applicable	These policies apply to water transportation and port development and operation.
117. Maximize existing port use.		
118. Port development dredging and filling criteria.		
119. Navigational safety.		
120. Coastal ferry service feasibility		

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
<u>PUBLIC ACCESS TO THE COAST</u>		
121. Coastal access.	Indirect	This policy applies indirectly to subject development in that it requires local planning to incorporate maximum accessibility of the coastline in local land use and transportation planning. The means by which this is achieved through local land use planning and regulation will affect the scale, the location, and the quantity of development.
<u>The Right of Public Access</u>		
122. Guarantee for public access.	Indirect/Direct Site Specific	These policies implement Policy 121; they require the more specific statement and enforcement of the public's right of access to the coastline in planning and land use decisions. These policies also implement Policy 121 by requiring that where the policy is applicable, new developments shall incorporate public access-ways within them, grant easements for such use or deed right-of-ways to public agencies.
123. Public accessways to the coastline.		
124. Manage public access.	Not Applicable	This policy specifies that public accessways and areas will be properly managed and maintained.
<u>Quality of Access</u>		
125. Lower-cost tourist facilities.	Indirect.	This policy requires that local land use designations and regulations incorporate adequate low cost tourist facilities in near coast areas.

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
126. Coastal access for low- and moderate-income persons.	Direct, Project Specific	This policy calls for new residential developments to incorporate some percentage of moderately priced housing units. This policy will affect specific developments to the extent that 1) development displaces existing low income housing and is required to incorporate housing for similar income groups; or 2) that low or moderate income housing is called for to achieve a local housing mix and funds are available to subsidize such housing.
<u>Access Through Multiple Use of Coastal Lands</u>		
127. Surplus lands.	Not Applicable	This policy applies to retention of ownership of surplus public land.
128. Public access and institutional development.	Indirect	This policy gives priority to institutional public and quasi-public development in the near coast area as a means of ensuring the maximum of public access and the minimum of private control of that area. This policy indirectly affects development in that it becomes an element of local land use decisions which affect the scale, location, and quantity of subject development in the development area.
129. Public use of federal lands.	Not Applicable.	These policies encourage maximum use of federal lands and multiple use of private property in order to ensure maximum access to near coast areas.
130. Multiple use in major facilities.		
<u>RECREATION</u>		
131. Coastal recreation and resource protection.	Indirect	This policy is a general statement of recreation policy for coastal areas. It will indirectly affect development depending upon land use planning decisions related to open space and recreational use of coastal lands including those within developed areas. Implementation of this policy will affect the scale, location, and the amount of development permitted within the development areas.

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
<u>Optimum Coastal Recreational Use</u>		
132. Oceanfront land recreational potential and other uses.	Indirect	These policies further refine Policy 131 and call for minimum recreational use of the ocean front, the priority of commercial recreation over private development and the use of the shore line for water dependent recreation. These policies affect local land use planning decisions and through them the quantity, scale, and location of subject development.
133. Commercial recreation has priority over private development.		
134. Shoreline areas reserved for water-dependent recreation.		
135. Alterations of coast for recreation restricted.		
136. Use of upland areas.	Not Applicable	These policies relate to a variety of specific considerations in implementing the overall recreational Policy 131.
137. Variety of recreational facilities.		
138. Overnight reservation system.		
139. Equity in recreational facility maintenance costs.		
<u>Recreation and Development</u>		
140. Development, open space, and recreation.	Indirect	This policy also is part of the implementation of Policy 131 and calls for the correlation of open space and recreational use plans with proposed development. Implementation of this policy is accomplished through local land use planning and administrative processes and generally will affect the amount, scale, and location of private development.

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
141. New development on-site recreation.	Direct, Generally Applicable	This policy calls for the incorporation of on-site recreational facilities and opportunities in order that new development will not place additional burdens on public open space and recreational facilities. This requirement directly affects the design and the amenities required in subject developments.
<u>Recreation and Resource Protection</u>		
142. Access and recreational use limitations.	Not Applicable	These policies propose various controls to ensure that recreational use of coastal areas will not damage the environment.
143. Off-road recreational vehicle use.		
144. Long-range recreational resources protection program.		
<u>Coastal Trails System</u>		
145. Coastal trails system.	Not Applicable	This policy calls for the development of a coastal trail system.
<u>Marinas</u>		
146. Boating facilities and coastal resources.	Not Applicable	These policies apply to boating facilities and usage.
147. Boating facility use.		
148. Public access to marinas.		

ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
<u>EDUCATIONAL AND SCIENTIFIC USE</u>		
149. Coastal environment education.	Not Applicable	This policy encourages coastal environmental education.
<u>Coastal Reserve System</u>		
150. Coastal reserve system.	Not Applicable	This policy calls for the establishment of a coastal reserve system to properly manage coastal reserves.
<u>Historical and Prehistoric Resources</u>		
151. Historical and prehistoric resource protection.	Not Applicable	This policy calls for the protection of historical and prehistoric resources. The development area assumptions exclude significant historical and prehistoric resources.
<u>RESOURCES RESTORATION</u>		
152. Restore degraded coastal resources.	Direct, Site Specific	This policy calls for the restoration of significant coastal resources when new development takes place. Implementation of this policy could require that a redevelopment project incorporate the restoration of significant land forms, wet lands, etc. at the time of redevelopment and thus would affect certain projects.
153. Environmental damage to be offset by restoration.	Direct, Site Specific	This policy calls for the restoration of the environment if a development requires damage to the environment. The implementation of this policy would apply to specific developments that would degrade important natural coastal resources.



# Appendix A (Continued)

## ANALYSIS OF COASTAL PLAN POLICIES

<u>Policies</u>	<u>Classification</u>	<u>Explanation</u>
154. Lot resubdivision or consolidation.	Indirect/Direct Generally Applicable	This policy affects the means by which governmental agencies carry out land use and redevelopment plans. The implementation of this policy could have an affect on the scale, location, and the type of development within the development area. This policy also directly affects all potential development in the area in that it encourages land assemblage, consolidation of small lots, and the elimination of fragmented subdivisions.

## COASTAL LAND PUBLIC ACQUISITION

155. Public acquisition priorities.	Not Applicable
156. Techniques for expanding public use of the coast.	
157. Protect potential acquisition.	
158. Coastal recreational facilities funds.	
159. Existing state acquisition authorities.	
160. Interagency coordinating council.	

These policies specify the criteria for and the means by which public land will be acquired along the coastline.

## FUTURE PLANNING STAGES

161. Coastal plan to be carried out by regional and local plans.	Not Applicable
162. Subregional plans.	

These policies are procedural and call for and specify the means of developing and carrying out regional, subregional, and local plans.

LARGE SCALE REDEVELOPMENT

HYPOTHETICAL CASE

The purpose of this hypothetical case is to explain the kinds of costs that are incurred in the redevelopment process and indicate the "order of magnitude" of such costs which are likely to be incurred by a governmental agency in carrying out a large scale redevelopment project. We believe that this case in varying degrees provides a typical example of what is necessary for large-scale redevelopment in areas identified in the Coastal Plan for concentration of development. In the following sections we describe the redevelopment site, describe the current level of development, set forth the redevelopment objective, analyze the cost of the redevelopment, and state the conclusions which can be drawn from this case.

Redevelopment Site

The site selected for redevelopment is, most importantly, in an area where it is appropriate to concentrate development under the Coastal Plan. It is located within the boundaries of a city that is part of a larger metropolitan area. The site consists of four contiguous rectangular blocks at 2.25 acres per block. It is bounded on one side by a main traffic artery and on other sides by neighborhood collector streets. The site is not on the beach but the beach is within walking distance.

Bus service is available along the main traffic artery. All utility trunk lines touch the site. Major shopping facilities, employment centers, and schools are all within easy access by short automobile or bus ride.

The neighborhood in which this site is located is in generally poor maintenance condition, but is not "blighted" as that term is used to describe inner city ghetto areas. Area residents are in lower to moderate income brackets and are typically employed in blue collar occupations.

Current Level of Development

The redevelopment site was originally subdivided for small single family residential homes on 5,000 square foot lots (20 lots per block). Subsequently, spot commercial development has occurred along the major traffic artery and small apartment buildings have been constructed on a spot basis where a developer could assemble two or three lots and obtain higher density zoning. Most of the area is still zoned for single family but the most recent city general plan (now being updated) shows the area as the location of walk-up or low-rise apartment development.

The original quality of housing construction was not high. Existing housing offers little attractiveness for upgrading or rehabilitation. Private redevelopment would take the form of assembling two to four parcels, removing

the single family housing and replacing it with a small two or three story apartment building. A higher level of zoning is required for this to occur.

A summary of the assumptions related to current development are as follows:

<u>Type of Improvement</u>	<u>Number of Parcels</u>	<u>Approximate Net Density Per Acre</u>	<u>Average Square Feet Per Parcel</u>	<u>Housing Units Total</u>	<u>Approximate Acres by Type of Use</u>
Single-Family Residences	50	9	5,000	50	5.7
Walk-Up Apartments	8	18	12,500	40	2.3
Commercial	5	-	10,000		1.1
Streets					9.1
					.9
TOTAL	63			90	10.0

#### Redevelopment Objectives

In order to meet the requirements of the coastal zone legislation, a local community's plan calls for the redevelopment of the area in question to twice its current residential density and including the following:

- a variety of housing types ranging from high-use to townhouse;
- some neighborhood commercial facilities;
- a 20 percent provision of housing for lower and moderate income families; and
- on-site recreational amenities.

The plan calls for closing of the three streets which cross the site, creating a large parcel of approximately 10 acres. In accomplishing this objective, the development plans will meet the Coastal Plan policies relating to site coverage, parking facilities, design, and energy conservation.

#### The Costs of Redevelopment

The following table sets forth a summary of costs to a governmental agency to achieve the hypothetical redevelopment objective set forth above. Each cost item is explained following the table.

Property acquisition:		
- Single-family residential	\$ 1,500,000	
- Apartment residential	680,000	
- Commercial	<u>720,000</u>	
		2,900,000
Relocation:		
- Residents	900,000	
- Businesses	<u>150,000</u>	
		1,050,000
Site preparation		<u>500,000</u>
Subtotal		4,450,000
Administration and other costs		<u>670,000</u>
Total Redevelopment Cost		5,120,000
Less: Land sale to developer		<u>(1,740,000)</u>
Net Redevelopment Cost		3,380,000
Capitalized Housing Subsidy		<u>400,000</u>
Total Governmental Cost		\$ 3,780,000

Property Acquisition: All purchases are assumed to be at fair market value using the concept of highest and best use. Single-family residences are assumed to be purchased at an average price of \$30,000 per unit. Apartments are assumed to be purchased at \$17,000 per unit, a price which equates to monthly rents of about \$200. The five commercial parcels are assumed to be purchased for \$150,000 each. This price equates to a monthly rent for commercial space of \$.40 a square foot per month and assumes that each property contained 5000 square feet of rentable space.

Relocation: Relocation costs are assumed to be incurred in accordance with current practices in federally sponsored or subsidized projects. This means that the majority of relocation expenditures are for assisting the relocatee in the purchase or rental of "comparable" housing. We have assumed that relocation will cost \$10,000 per residential unit and \$30,000 for each business.

The relocation expense total amounts to 36 percent of the purchase price. Depending upon the area, redevelopment officials use estimates as high as 60 percent of purchase prices.

Site Preparation: This item includes demolition of structures, removal of streets, modifications to utilities, etc., and is estimated at \$50,000 per acre.

Administrative and Other: These costs include staff and consultant time to conduct site planning, perform engineering and market studies, carry out citizen participation, and perform administrative tasks. They are estimated at 15 percent of all other program costs. To carry out this project over a three to five year period then will cost approximately \$170,000 to \$220,000 per year.

Land Sale to Developer: This item represents revenue that is used to offset the costs of the program. The revenue is determined by the land value for the proposed development. In this case we have assumed 180 units of housing, and approximately 15,000 square feet of commercial space would be constructed. The market value of this development is \$8,700,000 assuming that the 180 housing units have an average market value of \$45,000 each and the commercial space a market value of \$30 a square foot. The land value in this development was assumed to be 20 percent of the market value.

Capitalized Housing Subsidy: This item estimates the cost to provide lower and moderate income housing. We have capitalized the cost here to show it as a one time cost on a comparable basis with other costs, even though it is likely that such a cost will be incurred in annual subsidies. The basis for this estimate is as follows: We have assumed that the least expensive unit in this development has a market value of \$35,000 and that the lower and moderate income families who would occupy these units earn \$10,000 per year. Based on the rule of thumb that one should not pay more than 25 percent of income on housing, this family can afford to pay \$2,500 per year. To own a \$35,000 house would cost approximately \$3,500 per year at today's interest rates and including upkeep. Therefore, a subsidy of \$1,000 per unit per year, or \$36,000, is required to provide such housing. Assuming this housing program is administered on an annual basis, we can add an administrative cost of 10 percent resulting in an annual cost of \$40,000. Capitalizing this annual expenditure at 10 percent yields a one time cost of \$400,000.

### Conclusions

This case is hypothetical. Each of the numbers used above may be quite different in the analysis of a specific case. Nevertheless, in the aggregate, the relationships shown above are representative of actual redevelopment

experience. From this kind of analysis we can draw two general conclusions as follows:

- First, redevelopment is a long and complex process. Completing a project such as that described above will take five years from start to finish under optimistic assumptions. It simply takes that long to properly acquire parcels, relocate existing residents, and prepare the site on such a scale.
- Second, between 60 and 80 percent of the costs of redevelopment are not recoverable from land sale. They must be subsidized by government and paid for through outright grant, tax increment financing, or some other mechanism. In this hypothetical case, it cost about \$18,000 per unit to provide all the housing and subsidize 20 percent of it for lower and moderate income families.

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THE CALIFORNIA COASTAL PLAN:

- (1) ECONOMIC INDICATORS OF THE EFFECTS  
OF THE APPEARANCE AND DESIGN  
POLICIES IN OPEN COASTAL AREAS;
- (2) ALTERNATIVE WASTE MANAGEMENT  
STRATEGIES FOR UNDEVELOPED  
COASTAL AREAS TO IMPLEMENT THE  
COASTAL WATER QUALITY POLICIES

Edited by Jerry Yudelson

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By

ENVIRON/MENTAL  
3004 Dana Street  
Berkeley CA. 94705



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The consultant team has used its best efforts to prepare this report, but it wishes to acknowledge that the study is but an initial effort, limited by significant time and budgetary constraints. While it is axiomatic with many people that more time and more money produce better research, we feel that this work indeed does provide important insights into the overall effects of the Coastal Plan policies studied.

Section 1 -

THE CALIFORNIA COASTAL PLAN:

ECONOMIC INDICATORS OF THE EFFECTS  
OF THE APPEARANCE AND DESIGN POLI-  
CIES IN OPEN COASTAL AREAS

Edited By Jerry Yudelson

Contributions By:

Nancy Abodeely  
Gerry Finn  
Joanna Kaufman  
Lynn Nelson  
Barbara Rasmore  
Irene Torrey, AIP  
Mark Trembley  
Gerry Wolff, AIP, ASLA  
William Ziefle

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## I. SUMMARY

This report explores the economic effects of applying the Coastal Plan's Appearance and Design policies to developments in essentially open, undeveloped, non-urban coastal areas. Most of these areas are along the central and northern coastline. The study considers the economic effects of the policies on design review for public agencies and private parties, highway development, public recreational facilities development, coastal zone housing, beach access and parking and utility undergrounding. Indicators of these effects are developed through a series of exemplary case studies.

The basic study methodology was to identify which policies were binding for various development types, in a range of coastal situations; to identify design, planning and action responses available to meet the policy goals; and to assess the economic effects and benefits of such responses. Costs were not assessed for the litter reduction and sign control policies or for the effects of any policies on public special districts.

The cumulative costs of adopting these policies were not evaluated. Several carefully chosen special case studies were used to illustrate the major categories of economic impact. The major concern was the magnitude of effect on costs.

The study's primary geographic area of concern is the "Coastal Resource Management Area," especially the "nearcoast area" and primarily the land areas seaward of either the Coast Highway or the road nearest the coast. Finally, the study focuses more on the costs of protecting the visual experience than on the detailed design of individual units, since it was felt that overall building clusters and height were more important visual features than exterior design, except perhaps for some very special situations.

The study's basic conclusion is that the Coastal Plan's visual policies may increase costs of public facilities and private developments, in certain limited situations, up to 5% - 10% over a baseline of no Coastal Plan and no really creative design responses to coastal situations. Even in cases of apparently higher costs, caused by responses to the visual policies, many of these costs will be short-term, and will begin to decrease if the Plan becomes an accepted and integral fact of life in coastal development design decisions.

The basic reason that the Coastal Plan's visual policies have few discernible significant economic effects is that other factors constrain public and private coastal development before the visual policies begin to play a role. These other factors include: (1) development driving forces such as the

market demand for private facilities (economic and financial feasibility) and capital outlay plans for public facilities; (2) existing "commitments to development" exemplified in current County General Plans, including the general restrictions of land use and zoning elements, conservation elements and seismic safety elements, and design restrictions of scenic highway elements; (3) existing public service infrastructure capacity (water, waste disposal, power, roads); (4) expressions of adverse community attitudes during the project review/planning process, resulting in political decisions for development permit denial; (5) the environmental impact reporting process resulting from the California Environmental Quality Act and subsequently promulgated guidelines often leading to measures to mitigate adverse visual effects of development designs; (6) currently accepted design practices, especially for public facilities; and (7) other Coastal Plan policies, which are expected to take precedence over visual policies, in the areas of development, recreation, transportation and access.

An analysis of the visual policies was made to evaluate design responses available under the policies. The design responses evaluated the appropriateness of each policy with respect to the interaction of varying landforms and development types and with respect to the effects of each policy on observers. It was concluded that design guidelines should be based on viewer perspectives, supported by a detailed coastal visual inventory, rather than based strictly on landforms categories used in the Plan, which tend to break down as one moves away from the beach areas.

A variety of design responses to visual policies is available. Such responses include relocating and partially undergrounding buildings; clustering development units; reducing overall development densities; creative use of landscaping techniques; aesthetic treatment of structure exteriors; relocation of roads; screening parking lots from view; and undergrounding utility connections. Methods of evaluating the economic effects stemming from such design responses are discussed briefly. Then, a series of case studies is presented to elucidate some of these economic effects, as discussed below.

(1) Prospective design review costs were investigated for Del Norte, Humboldt and Mendocino Counties, with local government estimates of incremental costs for such review set at \$5,100, \$33,060 and \$2,820 per year, respectively. In addition, design review will generate costs to private parties. Development of a handbook of appropriate design responses would probably serve to make the design review process more efficient.

(2) Recreational travel in Marin County was examined to assess conflicting and complementing relationships between visual policies and access/recreation policies. No costs for recreational facilities development were found attributable to application of the visual policies.

(3) The relationship of the visual policies to beach transportation, access and parking problems was evaluated for San Gregorio State Beach (San Mateo County) and the Hoover Ranch State Beach (currently being acquired by the State Dept. of Parks and Recreation as an addition to Big Basin Redwoods State Park in Santa Cruz County). At San Gregorio State Beach, current and proposed parking arrangements were examined. The basic conclusion reached was that proposed parking development conformed, for the most part, to the visual policies, even though design work was completed in late 1972, long before these policies were developed. The extra cost to achieve compliance with the visual policies was estimated to be about 2% of the total construction monies proposed for ultimate development of the beach. In addition, it was noted that the size of proposed parking facilities seemed inadequate to handle the design capacity for recreational use, especially at "ultimate development."

Hoover Ranch, along Waddell Creek, is currently being acquired for the State Park System. Preliminary development design was attempted, to see whether conflicts existed between visual policies and beach development, especially for parking areas. In this case, lower Waddell Creek Valley has important seasonal and permanent wetlands, plus very sensitive and valuable ecological areas which greatly hinder parking site development. Parking costs were estimated for a variety of locations. The cheapest parking development (for 375 cars) is on the ocean side of Highway 1, in a very visible area. Other inexpensive parking sites appear to be located too close to the wetlands to be desirable. The only ecologically and visually acceptable parking area is hidden on coastal bluffs (not scheduled for acquisition), has a small capacity, is not too accessible from the beach, and is three to five times as expensive to develop (per parking space) as other lowland parking areas. In the Hoover Ranch beach area, then, a strict application of visual policies to parking site development probably would create significantly adverse economic, physical impacts, and would also have to include ecological considerations.

(4) Development costs of individual homes related to application of the visual policies along the Sonoma County coast were investigated. The development factors most seriously affected were structure design, land acquisition (need for larger parcels) and public administrative activities. Extremely strict application of design guidelines, similar to those privately imposed by the Sea Ranch Association on Sea Ranch residential development, which have considerable effect on structural design, could raise individual residential unit costs by up to 10% per unit. This is probably the maximum level of impact attributable to strict application of the visual policies to residential development.

The study recommends detailed mapping of significant views, in order to develop a more rational design review process, rather than attempting to control bulk, height and placement of structures in a piecemeal fashion. If the natural scenery areas are plotted and controlled, the regulation of the placement of structures will generally not be necessary on a parcel-by-parcel basis.

(5) Undergrounding of utility distribution facilities was examined for cost implications. For the most part, existing rules and regulations of the State Public Utilities Commission and the Pacific Gas and Electric Company (in Northern California) currently control most undergrounding costs. For new facilities, application of the Coastal Plan's utility undergrounding policy would affect only isolated individual structures located more than 1,000 feet from a designated Scenic Highway. The costs would be directly dependent on the length of underground lines. For existing facilities, costs of undergrounding are very high and would fall most heavily on local residents. For this reason, conversion of existing overhead utility connections to underground lines is likely to be very gradual.

## II. INTRODUCTION

### A. THE VISUAL POLICIES

This study concerns itself with analyzing the economic effects of applying Coastal Plan "Appearance and Design" Policies (Policies 44-56)\* in essentially undeveloped coastal areas.

The study is exploratory in nature and details of applications are given only for selected case studies. Basic attention was given to costs to public agencies for design review, highways and recreational facility development and costs to the private sector for residential development and utility undergrounding. The study asks three basic questions:

- (a) which of the visual policies are binding, on which development types, in which places?
- (b) when the visual policies are binding, what design, planning and action responses can be undertaken to meet the visual goals?
- (c) what is the economic effect of these responses to binding visual policies? (who benefits and who pays, and how much)?

### B. ANALYTICAL APPROACH

As the study developed, it became apparent that a number of key assumptions would have to be made, in order for the analysis to proceed. These are:

- (1) The Plan will be adopted substantially as is;
- (2) The Plan will be implemented by local government. The design review process will be designed to expedite the permit/development process by making design standards and criteria clear and by allowing for early concept approval of development designs;
- (3) Visual policies are applied primarily in the Coastal Resource Management Area, especially the nearcoast area, and primarily in the land areas oceanward of either the Coast Highway or the road(s) nearest the Coast.

\*See Appendix A for detailed text of policies.



- (4) Visual policies are applied "at the end," following all other important Coastal Plan policies (e.g., recreation, development, transportation, access), which will take precedence;
- (5) The effects of the Coastal Plan visual policies in essentially undeveloped areas ~~are assessed~~ against a baseline of the "no Plan" alternative, where the policies are fairly unambiguous; in other cases, the costs of a range of potential interpretations are given;
- (6) Cumulative costs of applying the policies ~~were~~ not evaluated, because it was felt that several carefully chosen case studies would adequately illustrate major economic effects and that it was important to know what extra costs would accrue to public and private developments, whenever they might be built;
- (7) Costs of litter reduction and sign control (Policies 48 and 54) do not receive detailed treatment in this study; and
- (8) Costs to public special districts other than counties are not assessed.

The basic emphasis of the study is on how to implement the goal of the visual policies, namely, how to protect the structure of the visual experience (the relationship between cultural features and natural scenery) rather than on the control of individual structure design.

#### C. STUDY DESIGN

The report proceeds with a further analysis of the visual policies, identifies a set of appropriate design responses to the policies, and presents modes of economic evaluation of the effects of the design responses. In all this work, there is an attempt to separate that which is forced by the policies from that which is recommended (but still optional) and to focus on the costs of the forcing policies. In practical terms, a policy which doesn't force anything to occur is free, for the most part a nice statement which may lead to but not guarantee achievement of the policy objective.

### III. POLICY ANALYSIS

#### A. CONSTRAINTS AFFECTING DEVELOPMENT

Before the Coastal Plan visual policies begin to affect private or public development, a number of other constraints operate first. These include:

- (1) Development driving forces such as financial and economic feasibility (market demand) for private facilities and proposed capital outlay plans for public facilities;
- (2) Existing "commitments to development" in current County General Plans, including:
  - Land Use and Zoning elements
  - Conservation and Scenic Highway elements
  - Seismic Safety/Natural Hazards element;
- (3) Existing public service infrastructure capacity (roads, water supply, waste disposal, power);
- (4) Expression of adverse community attitudes during the planning/project review process, leading to political denial of development permits and plans;
- (5) The California Environmental Quality Act's Environmental Impact Report process, often leading to mitigation measures in development designs;
- (6) Currently accepted design practices for public facilities;
- (7) Other Coastal Plan Policies, such as:
  - Recreation
  - Development
  - ~~T~~ransportation
  - Access;

These constraints caused by applying Coastal Plan visual policies lead to physical and economic changes in designs and development processes, such as:

- Prohibition of coastal development plans
- Extra land purchases required
- Extra land development work

- Extra design work
- Extra time in permit processing & design review
- Relocation of facilities to less desirable or more costly locations
- Conflicts between Coastal Plan policies.

## B. INTERPRETATIONS

Basically, this study interprets the visual policies from the designer's point of view, i.e., how one would try to work out the implementation of the policies to build various facilities. Some of the policies are quite explicit; others can be understood only through examination of a variety of scenarios, relating geographic location (including landform type) to development type. The scenario approach was used in this study to choose the case studies, as representative indicators of the variety of situations where the visual policies would be applied in essentially open, undeveloped coastal areas. From this effort, it became clear that specificity of economic effects was directly dependent on narrowing the range of policy interpretations. Thus, many of the case study conclusions appear to represent "worst case" cost estimates resulting from very strict policy applications, not likely to occur in many situations, especially if the Coastal Plan is implemented largely by local (in this case, County) government.

The emphasis of the policies on regulating development for various landforms leads to further problems of interpretation. The Coastal Zone contains many composite landforms, with varying visual impact boundaries and areas of influence. Landforms have not been mapped and probably cannot be adequately defined for enough relevant decision situations. Landforms do not regulate development adequately, because observer position and attitude varies so much and because the key policies are really not too different for each landform.

## C. APPLICATION MODES

One of the basic problems in applying the visual policies is that they are designed to enhance a subjective experience, which depends as much on the attitude, behavior and background of the viewer as on the physical view. Thus, the policies are remiss in specifying whose view is to be preserved or enhanced. The visual policies are a long way from the actual living experience of riding, walking, hiking and otherwise traveling and otherwise just being in the coastal zone. The policies do not seriously consider the psychological re-creation aspect of coastal recreation and do not distinguish

between such varying observer viewpoints as resident-transient, urban resident vs. rural inhabitant; ethnic, age and economic class differences. Since our society is culturally so varied and seemingly always in transit, multiple transitory experiences should be respected. This point of view argues for a separation of policy applications into areas which can be heavily or extensively developed and those which will be left essentially alone. Then, careful, clever design on the more intensively developed areas can be used to create adequate visual experiences there, while allowing very creative experiences, those which really work on people's lives, to be available to those who seek them.

## D. RELATION TO OTHER POLICIES

### 1. Recreation and Access Policies

#### a. Policy Analysis

The provision of transportation and recreational facilities and access are both opportunities and constraints in the conservation and development of coastal visual resources and views. Policies for coastal access and recreational management will also affect the visual qualities of the coast and the kinds of issues likely to occur under Coastal Plan implementation.

Relationships between the appearance and design policies and transportation and recreation within the viewshed are detailed in the following tables. Table 1 is a listing of appearance and design policy statements having relevance to the overall development and conservation of coastal visual resources as well as those which refer to the planning and design of transportation and recreation improvements. Relevant policy elements are grouped according to their implications for the location, design, and planning of coastal recreation and transportation. The policies refer more to the recreational facilities and roads within proposed new developments than to specific siting or design of independent facilities. Most of the policy elements constitute design guidelines for approved development rather than specific requirements for planning and location of facilities and uses within the coast. Policy application is referred to a process of design evaluation and local planning interpretation and implementation.

#### b. Design and Planning Response

The focus of the appearance and design policies on project-level decisions and plans limits their relevance to issues suggested by coastal transportation and recreation

policies. While the policies and ensuing procedures and standards apply to acceptable private development decisions under the current permit system and future design review, their application to the design and planning of coastal recreation and transportation is not addressed directly, although it is within their scope of concern, i.e., protection of coastal visual resources, scenic areas, and views (See Policies 44, 45, and 50).

The design response to the appearance and design policies would be limited to the project-level and site-specific considerations in Table 1, emphasizing visually compatible structures which minimize damage to coastal landforms. In addition, more compact and efficiently designed facilities are called for to minimize the number and scale of physical improvements. A minimum of facilities, clustered near existing features, scaled and designed to protect landforms, views, and coastal visual quality are also specified. Undesirable facilities, billboards, and signs would be removed.

The planning response to the appearance and design policies is more likely to determine their impact on coastal recreation and transportation. Besides local design elements and review boards, the policies call for the preparation of plans for significant new development, including all those over 3 acres and 15-20 units, and plans which demonstrate policy compliance and coordinate open space, circulation, design, and view protection elements. Preparation of the local design procedures and standards are to address open space preservation, protection of view corridors and natural features, non-motor access systems, circulation patterns, and structural controls. The design elements, in turn, must be coordinated with transportation, land use, utility, and recreational planning.

### c. Economic Consequences

Outside of the coastal transportation and recreational policies and local planning and development contexts, the appearance and design policies are not likely to involve significant changes or costs. Their role and influence on coastal recreation and transportation will be determined through subsequent interpretation and incorporation in implementation level planning. Policy impacts will be affected by the following factors:

- (1) Relationships between appearance and design policies and transportation, access, and recreation policies and their relative importance in coastal planning and decision-making
- (2) Local coastal issues and policy conflicts
- (3) Local planning and implementation context:
  - attitudes toward Coastal Plan and coastal visual resources
  - existing coastal controls and policies.

TABLE 1

APPEARANCE & DESIGN POLICY IMPLICATIONS FOR COASTAL  
RECREATIONAL USE & TRANSPORTATION ACCESS

No.	<u>Policy</u>	<u>Design Response</u>	<u>Planning Response</u>
44	<p>Design devt. to protect coastal viewshed.</p> <p>Protect visual quality of coast as resource of public importance, especially areas which can be seen from major access roads, trails, vista points, and recreation areas, and the shoreline.</p>	<p>Design physical improvements to preserve scenic areas.</p> <p>Provide attractive improvements to enhance viewshed quality.</p> <p>Remove undesirable elements to restore visual quality.</p>	<p>Prepare design procedures and standards as part of local general plans.</p> <p>Develop areawide guidelines to coordinate development proposals in order to preserve open space, protect view corridors and natural features; link open space systems with bikeways and paths, avoid duplicating circulation, and minimize intrusion of structures.</p> <p>Coordinate transportation, land use, utility, and recreational planning with preparation of design procedures and standards</p>
45	<p>Protect the visual quality of highly scenic areas.</p> <p>Special consideration to protection of designated highly scenic areas.</p>	<p>Design new development to protect and be visually subordinate in highly scenic areas.</p>	
46	<p>Establish local design procedures and standards.</p>		

TABLE 1 (cont.)

No.	<u>Policy</u>	<u>Design Response</u>	<u>Planning Response</u>
47	<u>Establish a design review process.</u>		<ul style="list-style-type: none"> <li>. Establish design review boards.</li> <li>. Submit area and detailed design plans for coordinating open space, circulation, design, and view protection elements and comply with visual and other coastal policies.</li> </ul>
49	<p><u>Design guidelines. Compatibility with natural environment.</u></p> <ul style="list-style-type: none"> <li>. Restrict improvements on beaches and wetlands, where they would conflict with dune ridgelines and movement, or where landforms would be significantly altered.</li> <li>. Locate coastal roads on inland side of estuaries.</li> <li>. Minimize number and locate bridges as far inland as possible.</li> </ul>	<ul style="list-style-type: none"> <li>. Clustering of new structures near other features.</li> <li>. Mitigate visual damage and increase recreational opportunities from channelization through landscaping, trails, and linear parks.</li> <li>. Design public accessways in estuary areas to respect their fragility.</li> <li>. Screen private roads on headlands.</li> <li>. Minimize driveway connections to highways and canyon bridges.</li> </ul>	<ul style="list-style-type: none"> <li>. Minimize pedestrian and vehicular traffic in fragile dune areas.</li> </ul>
50	<p><u>Design guideline: Protection of coastal views.</u></p> <ul style="list-style-type: none"> <li>. Protect coastal views from key viewing points and within new developments.</li> </ul>		<ul style="list-style-type: none"> <li>. Prevent inappropriate land use through zoning and development plan approval controls.</li> </ul>
53	<p><u>Design guideline: Alteration of natural landforms.</u></p> <ul style="list-style-type: none"> <li>. Prohibit facilities which require grading, cutting, and filling which significantly and permanently alter the appearance of landforms.</li> </ul>	<ul style="list-style-type: none"> <li>. Design necessary hillside roads to be as narrow as safely possible and conform to natural contours.</li> </ul>	
54	<p><u>Design guideline: Sign controls.</u></p>	<ul style="list-style-type: none"> <li>. Design simple, harmonizing informational and directional signs.</li> </ul>	



## 2. Highways

### a. Identification of any New Roads and/or New Costs Incurred Because of Enforcement of the Visual Policies

The California Coastal Plan will not require the construction of any new roads. In fact, the thrust of the Plan's policies is to reduce demands on highway capacities by encouraging transit and thereby reduce the need to construct new highway facilities. It is conceivable that compliance with the Visual Policies of the Plan could increase the costs of providing transportation facilities, but it is felt that the Plan's policies only reinforce already existing guidelines of the California Environmental Quality Act and the National Environmental Protection Act. The result of this is that costs attributable to the Visual Policies of the Plan are minimal to nonexistent.

In the near future, there will be few opportunities available to determine what extra costs due to compliance with the Plan's Visual Policies might be necessary on major highway projects, because of the current uncertain state now being experienced in California as a result of the Governor's freeze on highway construction and the return of the California Transportation Plan to the California Department of Transportation for major revisions. However, there is one cost easily separated from the bids received on the few highway projects let recently, and that cost is roadside landscaping.

The present cost for extensive landscaping of four lane divided roads has averaged approximately \$275,000 per mile of highway. This average low bid price has been for projects whose plans and specifications require landscaping which would more than adequately comply with the Coastal Plan's Visual Policies. The point to be noted here is that this landscaping was being done in conformance with other guidelines and policies, not those of the Coastal Plan, as the projects were being constructed in California in areas not within the Coastal Zone. This fact reinforces the already expressed opinion that any costs of compliance with the Plan's Visual Policies will be minimal, as the requirements of these policies are for the most part already covered by other existing laws and current design practices.

### b. Problems and Costs Involved in Moving Highways up Ridges, etc.

Given a choice, most agencies would prefer to build highways on relatively level ground rather than on hills, ridges, etc. because it is cheaper. The following quote exemplifies this philosophy, "...choices between possible routes and decisions regarding design alternatives must be made. These should look toward the cheapest overall cost, in the long run."<sup>1</sup>

1. Oglesby and Hewes, 1973, p. 130.

The siting of highways and roads along the level coastal terrace without regard for other considerations, environment, aesthetic, etc., is a result of this narrow policy. It is anticipated that this policy would be changed if the Coastal Plan were enacted. This policy change will probably result in highways being moved to higher grounds along ridges and/or their faces with an attendant increase in construction costs.

Most of the increased costs will come about because road construction in hilly terrain normally requires more earthwork and more and larger retaining walls. Another element which might increase costs is the storm drainage system because of the need for more sophistication in hilly terrain. Policy 49c specifically addresses this latter problem.

The extra costs brought about by construction of a road in hilly terrain rather than in flat terrain are unique to each project and any attempt to provide even a rough rule of thumb for estimating those extra costs is doomed to failure because of the extremely wide variety of conditions existing along the California coastline. The best that can be said is that the costs of each project's alternative alignments must be individually evaluated, and that, all other things being equal, construction in hilly terrain will cost more than construction in flat terrain.

c. Preliminary Planning/Policy Analysis: Design/  
Cost Responses for Effects of Visual Policies  
on Transportation Elements and Related Public  
Service Elements (shown in Table 2)

Table 2

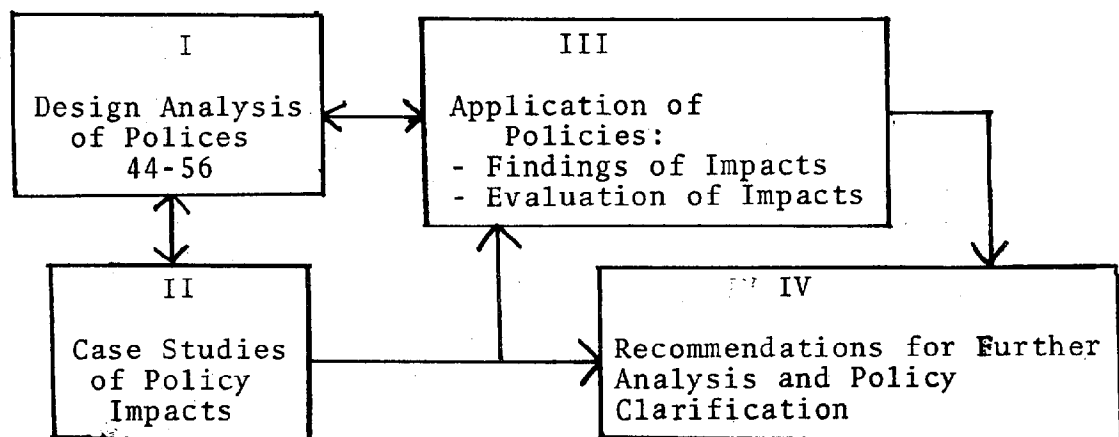
<u>Policy</u>	<u>Cost Factors</u>
44	Increased costs of design and construction
45	Same as 44
46	Initial increase in planning, design and construction may be offset later because of coordinated planning and design savings
47	Same as 46
48	Higher initial and perhaps also maintenance costs
49a	May require rerouting of proposed facilities and increase construction costs
49b	Same as 49a
49c	Increased storm sewer costs, may require rerouting
49d/e	May have similar effect as 49c
49f	Increased construction costs for roads
49g/h	May require rerouting of roads, etc.
50a/b	Limit parcel development in important scenic areas
51	No effect
52	Increased initial landscaping costs, but may reduce maintenance costs
53a	Higher planning and design costs, but may reduce construction costs
53b	Higher earthwork and landscaping costs
54a	No effect
54b	Increased costs for turnouts, kiosks, etc.
54c	No effect
54d	Small cost increases for placing new signs
55a-d	Higher costs to utilities, passed along to consumers
56	Increased planning, design and construction costs, particularly in landscaping.

#### IV. DESIGN RESPONSES

##### A. DESIGN ANALYSIS OF POLICIES

The essential objective of the following sequence of analytical steps is to lead to determination of the cost and benefit consequences of Coastal Commission Policies 44-56 if they were instituted as presently stated. Because it is methodologically difficult to isolate the effects of these policies from those stemming from other Commission Policies, or to anticipate the scale and location of future development, it will be necessary, in most cases, to state effects in orders of magnitude: "two times current grading costs" would be one example of expressing costs relative to prevailing state-of-the-art design and construction techniques.

The following diagram illustrates the sequence and relationships between the four main stages as conceptualized for this approach:



The first two stages are diagnostic, while the latter two are analytical and prescriptive. The following outline describes the process and products of each stage:

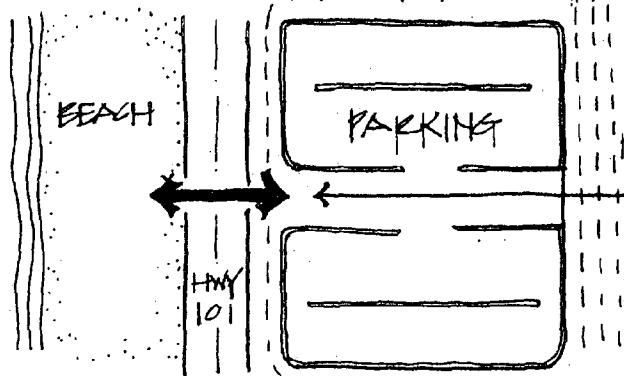
##### (1) Design Analysis of Policies

Stage I begins initially as an 'a priori' examination of each policy from a design point of view. This stage is later refined by the empirical findings of Stage II. The format of presentation is one of graphic annotation. The sketches and comments on the following page, in Figure 1, show an example of Stage I format. Through deduction, past experience, and subsequent findings from Stage II, the designer can see, where appropriate:

REPRESENTATION OF STAGE I - GRAPHIC ANNOTATION - Figure 1

Policy Statement 49a: "No permanent structures shall be permitted on the open beach itself except facilities necessary for public health and safety...or structures found to be necessary for public welfare. Other structures or other improvements shall be located inland from the open beach."

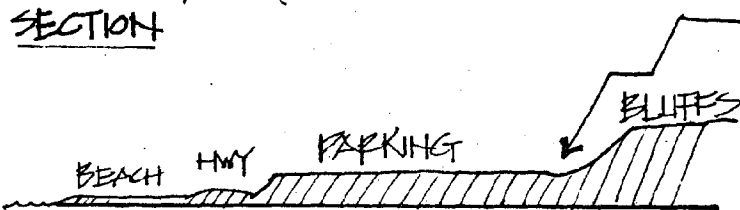
VISUAL INTERPRETATION



POSSIBLE CONSEQUENCES

OVERHEAD OR UNDERGROUND ACCESS TO & FROM BEACH & PARKING WILL HAVE TO BE PROVIDED FOR PUBLIC SAFETY.

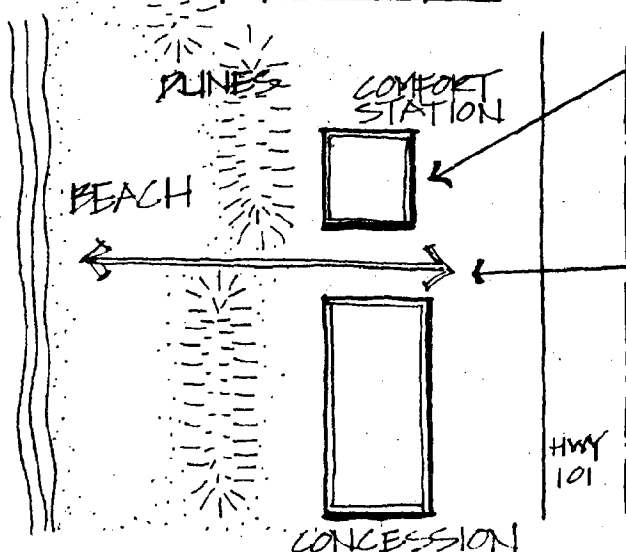
SECTION



LARGE-SCALE CUTS ARE NECESSARY IN BLUFFS; INCREASE IN DEVELOPMENT COSTS OF 50%; MAY CONFLICT WITH POLICY #53.

Policy Statement 49b: "Development that would significantly hamper natural dune movement, that would conflict with the visual form of dune ridgelines, or destroy dune-stabilizing vegetation, shall not be permitted. Pedestrian and vehicular traffic in fragile sand dune areas shall be minimized."

VISUAL INTERPRETATION



POSSIBLE CONSEQUENCES

VIEWS TO PINES FROM ROAD MAY BE IMPAIRED IF LANDSCAPING MEASURES NOT TAKEN.

ACCESS TO & FROM BEACH AND FACILITIES WILL HAVE TO BE CAREFULLY SELECTED THROUGH PINE FIELDS.

SECTION



IF PINES ARE LOW (6-8'), STRUCTURES WILL HAVE TO BE SUNKEN SO RIDGE-LINE VIEW FROM BEACH IS NOT IMPAIRED. COSTS INCREASED BY 20%. HOWEVER, SINKING STRUCTURES MAY NOT ALWAYS BE FEASIBLE.

- (a) How, through thumbnail sketches, each policy, as stated, will most likely be interpreted by affected agencies;
- (b) What the likely first-order cost or benefit consequences are, stated as an expression of prevailing practices;
- (c) How policies may in themselves conflict, or conflict with other Commission policies;
- (d) The appropriateness of each policy with respect to each development type and landform; and
- (e) How a particular type of user (beach-goer, sightseer) is likely to be affected by the policy.

(2) Application of Policies

The results of Stages I and II will be used to show:

- (a) Types of design responses to policies by affected agencies;
- (b) Which policies are most difficult to interpret and apply;
- (c) Which policies have the most and least effects in terms of long and short-term costs/ benefits according to development type and landforms;
- (d) The magnitude of impacts on affected agencies; and
- (e) A means of assigning different weights to policies for resolving conflicts and establishing priorities.

## B. GENERIC DESIGN RESPONSES

Application of the design analysis approach to policy interpretation generated a variety of generic design responses to the visual policies, as shown below:

- (1) Set back buildings away from ridgelines, view corridors, public views; partial undergrounding of buildings may be necessary; custom site design may be required; conformance to existing building lines;
- (2) Clustering of development units (especially housing); relocate housing on building sites;
- (3) Lower overall development density, but with higher density in certain areas; minimize overall land alteration;
- (4) Landscaping: screening by vegetation, plantings, earth berms, partial undergrounding;
- (5) Aesthetic treatment of buildings, fences and other structures (e.g. with weathered wooden siding); custom building design may be required;
- (6) Relocate roads to hide or eliminate cuts and fills; lengthened access roads may be necessary;
- (7) Parking lots partially undergrounded or screened, otherwise hidden, dispersed, unobtrusive.
- (8) Underground of utility connections;
- (9) Design review process may be costly, but can be made to run smoothly if design concepts are approved before detailed building designs are made.

## V. ECONOMIC ANALYSIS

### A. BASIC BENEFIT/COST INDICATORS

The basic problem in evaluating the economic effects of design responses to the Coastal Plan visual policies is that the benefits are mostly diffuse and qualitative, while the costs are concentrated and mostly quantitative. Thus, discussion of economic effects tends to focus more on costs than on offsetting benefits. In a sense, the Coastal Initiative was a first, rough statement that the social benefits of development regulation in the Coastal Zone exceeded the potential economic costs. The Coastal Plan policies represent an attempt to define that point of view in much more detail. This study focuses mainly on costs of policy implementation, but the reader should not forget that each policy statement is an attempt to secure substantial social and environmental benefits. The real question, then, is: what are the real costs, and are these benefits worth the costs needed to secure them?

Some basic methodological points are the following:

1. It is not possible to make a determination of the actual economic impacts of the policies in the Plan because (1) future development patterns are not certain either with or without the Coastal Plan, and (2) limitations are severe on obtaining data which have the area within the Coastal Zone as a basis.
2. The methodology used in this study focuses on certain geographic areas and segments of the Plan and describes in detail the implications of relevant visual and design policies in each of the case studies selected.
3. Economic analysis consists of two processes:
  - a) identification of impacts of a specific policy (as defined and clarified by the study); and
  - b) evaluation of those impacts in terms of who is affected, how, how much, and for how long.
4. Some of the principal economic impacts observable from analysis of the case studies include:
  - changes in tax bases of local and state governments resulting from changes in property values and incomes, which in turn result directly from policies which restrict "inappropriate" development.



- increased capital improvement and maintenance costs of local and state governments
- increased planning and administrative costs of local governments resulting from design review requirements and requirements for monitoring and enforcement
- increased (but perhaps also decreased) private construction costs resulting from requirements regarding grading, landscaping and exterior appearance
- increased design and construction costs to the State government for highways and recreational facilities which must be located so as to have the minimum adverse effect on the visual quality of the area
- increased costs to industry and the public for undergrounding utility lines.

A system of cost/revenue accounts should be used in each case to record the fiscal impacts of the applicable policies on each sector of interest.

The economic functions used in the system of cost/revenue accounts will be used to classify the impacts of some policies as major or minor (costs/benefits) when the exact value of the impact cannot be determined; e.g., with a real tax rate of 2%, property values would have to fall by \$50,000 in order to reduce local tax revenues by \$1,000. If it is determined that a particular policy will lower total property values by less than \$20,000, we may classify the impact as a minor cost to local government and give that policy less concern than one which is likely to lower property values by \$100,000.

These economic functions are particularly useful in estimating the net impact of a policy which may induce a cost to one party and a benefit to another; e.g., where the state purchases a parcel of land from an individual, this purchase represents a benefit (increased income) to the landowner, a cost to the state government (purchase price) and a cost to the local government (reduced value of property on the tax rolls).

## B. EVALUATION OF ECONOMIC CONSEQUENCES

Basic issues in economic evaluation of Coastal Plan visual policy effects are mentioned below. The study had neither time, resources nor mandate to investigate this area more thoroughly.

1. Social and environmental benefit quantification is needed;
2. Cumulative costs; magnitude of effects, into the future, determined by "buildout rate," and discounted by an appropriate interest rate to derive net present value of economic effects;
3. Distributive effects: who benefits and who pays in terms of socioeconomic or geographic groups;
4. Government sector costs may not increase, if service levels for County public services outside the Coastal Zone are decreased;
5. Macroeconomic effects revolve chiefly around the issue of substitutability: To the extent that investment opportunities denied in the coastal zone are available elsewhere in the State and are actually pursued, net macroeconomic costs are reduced, and the main costs are distributive rather than economic. In this sense, all fiscal effects are distributional depending on which income groups pay relatively more or less in taxes to support government activities;
6. There will always be some real gross private economic costs to government regulation (even if there are offsetting public benefits), because there is never perfect substitutability due to lack of perfect information; discontinuities in scale and timing of investment opportunities; entropic costs of maintaining the regulatory system; uniqueness of some coastal zone investments (e.g., weather, coastal views, psychological value of being at land/ocean interface, ocean fishing, scientific study of coast, etc.); poor private market functioning; and activity capacity limits elsewhere.

## VI. CASE STUDIES

### A. DESIGN REVIEW PROCESS ON THE NORTH COAST\*

#### 1. Policy Analysis (Policies 46 and 47):

Remote and sparsely populated counties such as Del Norte County may set criteria and standards that differ from those of more urban areas of California, although consistent in general with appearance and design policies of the Coastal Plan; and within counties those criteria and standards may differ according to local community preferences.

According to the Coastal Plan, the State Coastal Agency shall have the following responsibilities: 1) carry out the planning and research necessary to keep the Coastal Plan up to date in light of changing conditions; 2) assist local governments in Plan implementation; and 3) through the appeals process, monitor the decisions on proposed coastal conservation and development. Therefore, the State Coastal Agency may assist the North Coast Region (Del Norte, Humboldt, Mendocino Counties) in selecting guidelines, criteria, and standards for design review, based on county and local preferences.

Regional design review boards may serve areas such as Del Norte County which, due to its sparse population of 14,600 residents and its remoteness, may not be able to supply the professional talent for its local (volunteer) design review board. Careful selection must be made of board members. A design review board with just planners, engineers or zoning administrators, and no designers, is missing the whole point of having a design review board. The San Francisco Bay Conservation and Development Commission (BCDC), for example, requires its seven-member board to include at least one architect, one landscape architect, and one engineer.\*\*

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\* Case study by Gerry Wolff, ASLA, AIP.

\*\* San Francisco Bay Conservation and Development Commission (BCDC) Bay Plan Evaluation Project: Appearance, Design and Public Access, June, 1974, p. 8.

## 2. Design Responses

### a. Del Norte County

As Del Norte County is a county of "individualists," there is a resistance to regulations imposed from outside the county.\* There is specific opposition to the California Coastal Plan due to concern of potential loss of local control to state and federal agencies.\*\*

Consistent with this expressed attitude, there are no plans for design procedures and standards, and no plans for a design review process to be included in the county general plan and ordinances. Also, there will be no design guidelines unless they are part of the permit process.\*\*\*

In contrast, the incorporated area of Crescent City has a design review committee in order to guide rebuilding to replace destruction resulting from the 1964 tsunami.

### b. Humboldt County

The idea of a design review board is not favored in Humboldt County due to the time and energy that would be consumed. The staff feels that the same objectives can be accomplished through the staff administrative process. As the Board of Supervisors is not in full agreement with the Coastal Plan, and due to budgetary problems, Humboldt County is not likely to form a design review board on its own initiative. The design review activity is considered arbitrary, and less efficient than staff review.\*\*\*\*

The County intends to meet the other directives of the Coastal Plan because they are considered needed anyhow, not just because the State requires them (Garberville already has general design guidelines encouraging the use of wood, western theme, and "good design" in general). Design standards differ among communities within the county, determined by county staff based on local preferences. There is a critical lack of public information in Humboldt County. Communications are needed in all phases of the planning process (specific ordinances, code enforcement, etc.). Design guidelines can be a part of this effort.\*\*\*\*\*

\* Ernest Perry, Del Norte County Planning Dept., tel. communication.

\*\* Supervisor William L. Erickson Co. of Del Norte, letter of 9/16/75 in opposition to Coastal Plan to Members of CSAC Executive Committee

\*\*\* Larry Henderson, Humboldt County Planning Dept., tel. communication

c. Mendocino County

The area of Mendocino (unincorporated) within Mendocino County has a historic review board, a kind of design review board. The idea of a design review board for the county has been discussed, and favored by two-thirds of the Planning Commission. The Planning Commission would sit as design review board at regular meetings, or special meetings if required. Meetings are now two full days per month. A design guidebook is favored.\*

3. Economic Cost Indicators

a. Del Norte County

For design review processing, the Planning Department might use another person half-time at \$850/month, depending on area of Coastal Zone to be reviewed: 1) 1000 yards, less than half person, 2) five miles, half person or more.\*\* The increase in staff cost would be \$425/month.

b. Humboldt County

Design review would be assisted by a staff member at \$885/month, who would also be responsible for other tasks. It is estimated that the Planner I work load would increase threefold.\*\*\* At \$885, the threefold increase would be \$2755/month.

c. Mendocino County

Plan review is now conducted by Planner I and Planning Technician under the supervision of the Zoning Administrator; the staff time would probably increase about 20%-30%.\*\*\*\* Additional staff cost would average \$218-252 per month.

It may be that the State Coastal Agency can absorb the cost of design guidelines,\*\*\*\*\* criteria, and standards based on county and local values and preferences, thus making less costly any new development to the county or city agency and owner/developer, while benefiting the general public.

4. Recommendations for Implementation

In sparsely populated counties, such as those in the

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\* Larry Mitchell, Mendocino County Planning Dept., tel. communication.

\*\* Ernest Perry, Del Norte County Planning Dept., tel. communication 2/19/76.

\*\*\* Larry Henderson, Humboldt County Planning Dept., tel. communication, 2/19/76.

\*\*\*\* Larry Mitchell, Mendocino County Planning Dept., tel. communication 2/19/76.

\*\*\*\*\* See first page of this section.

the North Coast Region, a local design review board may be without meaning if there is not ample skilled professional design talent (architects, landscape architects, engineers) to choose from. Therefore, a regional design review board, to be appointed by the State Coastal Agency, would be appropriate. The regional design review board should draw from the regional talent pool of architects, landscape architects, engineers, urban designers, artists, sculptors, etc.; mixed with an adequate proportion of local persons knowledgeable in local (county and coastal) history, aesthetics, culture, and goals of the coastal communities.

After the Regional Commissions have gone out of existence, the State Coastal Commission would assist local governments in carrying out planning and research necessary, to keep the Coastal Plan up to date, and with the implementing of the Plan.\* Therefore, the State Commission's staff would be available to local governments for assistance in formulation of design procedures, standards and guidelines based on county goals and local preferences.

The goals of the counties and the local coastal communities are most important in this standards formulation process, and should be formalized by means of citizens meetings, etc. The State input would be in the form of labor and talent required for organizing local goals, with professional guidance, not the imposition of strict rules from the outside.

Strict standards are apt to produce sterile results, and thus should be avoided. Standards should allow for choice--a range of solutions--and for exceptions. The conclusion of BCDC, for example, was that specific criteria would not be desirable because they would inevitably be applied as the maximum that an applicant would provide and not the minimum as intended.\*\*

Flexibility of guidelines can give imaginative designers the freedom to arrive at innovative solutions as well as stimulate a high degree of interest on the part of the volunteer design review board members. It seems to be the intention of the Coastal Plan to regulate only scale and placement (not actual design) of new structures in most areas, to satisfy the call for design review.\*\*\*

\*California Coastal Plan, p. 13

\*\*BCDC, Bay Plan Evaluation Project: Appearance, Design and Public Access, p. 8.

\*\*\*Cf., for example, letter of Michael P. Fischer, Executive Director, North Central Coast Regional Commission, to Marin County Planning Director and Stinson Beach Planning Group, February 17, 1976.

## B. RECREATIONAL TRAVEL IN MARIN COUNTY\*

Marin County may be considered a "model area" for implementation of Coastal Plan policies. There is a high degree of involvement in coastal conservation and management, and coastal recreation and transportation have been particular policy and planning concerns for some time. The Marin Coast is almost entirely under public ownership and management, with nearly 60% within the National Park System and federal control. The National Park Service is responsible for the 64,000-acre Point Reyes National Seashore and the two-county Golden Gate National Recreation Area. Both are administratively designated as "recreation areas," a management category emphasizing use over the more typical "natural area" designation. Under the theme "Parks to the People," the National Park Service is developing a parkwide plan for park use and facilities in cooperation with the 2-year Golden Gate Recreational Travel Study of improved public access to and within national park areas.\*\*

The influence and fiscal consequences of Coastal Plan policies are assumed to be based on the relevance of the Plan policies to coastal recreation and transportation issues in the county and to its particular planning and implementation context. Accordingly, a survey of responsible coastal planning and implementation agencies was conducted to investigate the following:

- 1) Recreational and transportation coastal issues
- 2) Policy conflicts/Planning opportunities
- 3) Design and planning response to Coastal Plan policies
- 4) Policy impacts on coastal recreation and transportation and associated costs

### 1. Coastal Issues

The major recreation and transportation coastal issue in Marin is the balancing of coastal recreational access and use with resource conservation. West Marin attracts over 5 million visitors annually. There are four east-west lateral routes to West Marin, and weekend and holiday recreational traffic, plus local trips, produce considerable congestion and community disruption along these routes. Alternatives aimed at redistributing traffic and inducing modal shift are being sought in lieu of highway improvements. Meanwhile, recreational visitation is increasing, capacities are being held to 1973 levels, and local community pressure is mounting to restrict access further. Recreational alternatives are concerned with establishing acceptable levels of recreational use consistent with resource protection and access policies.

\*Case study by Nancy Abodeely.

\*\* U.S. National Park Service, 1975, p.3.

The second major coastal issue in Marin is the provision of visitor facilities. Public programs have generally emphasized day-use facilities. Commitments to recreational development by the County and State are being shifted to populated inland areas, and coastal activities are limited to maintaining existing facilities. The National Park Service provides facilities and programs geared to day use, with a limited amount of space for overnight stays. Increased emphasis will be placed on walk-in campsite facilities and similar accommodations. Pressures for expansion and development of commercial visitor facilities and overnight accommodations has become an important county issue. West Marin communities, already impacted by non-local traffic problems, oppose such development, because of increased attraction of coastal visitors and travel.

## 2. Policy Conflicts/Planning Opportunities

### a. Access

Access issues are being addressed through the Golden Gate Recreational Travel Study and National Park Service planning program now in progress. Involved agencies are awaiting completion of these two plans and the outcome of the various test programs established to promote transit usage and service and re-route traffic during congested periods. Existing access policies and implementation programs are aligned with Coastal Plan policies, and no additional costs would be incurred by the Plan itself.

### b. Facilities

Facility development within the coast will be limited by existing policy and environmental controls. The County supports scenic roadway development, but opposes official route designation, to avoid excessive visitor attraction. Coastal appearance and design policies are most likely to reinforce scenic roadway development and provision of roadside amenities and services. The type and extent of facilities to be permitted for recreational visitors and overnight accommodation is a planning issue to which the appearance and design policies are likely to be addressed, particularly in the determination of appropriate sites and design approaches. No significant costs are indicated.

### c. Planning

Existing policies, park development and travel planning programs, and county zoning (A-60) applying to the coast are already aligned with coastal appearance and design policies, according to survey informants, and few conflicts seem to come within exclusive purview of the Plan. Physical development pressures on the coast are limited by the large extent of public ownership, conservative management policies, and existing commitments to balancing recreational access with environmental carrying capacities



and local community needs. Non-structural alternatives are favored by the County and National Park Service for both access improvements and recreational site development.

To some degree, federal presence in Marin has pre-empted local planning initiative with respect to the coast. County policy emphasizes community planning and resources and efforts are mostly concentrated in inland communities. State coastal recreation sites are maintained, but resources are also committed more to populated local areas.

Another consequence of federal ownership of most of the coast has been intensified development pressures elsewhere on the coast and in the County. Private development proposals motivated County land acquisition from the Bolinas Harbor District and State acquisition of property at Tomales Bay. It is likely that such actions could be mediated through application of coastal appearance and design policies, rather than through public land purchase.

The role and impact of the Coastal Plan policies in Marin will be determined by local interpretation and the implementation program the County develops. A pilot project funded by the Federal Office of Coastal Zone Management is underway in Marin County and in selected California coastal cities to develop an implementation program for the Coastal Plan. Given the latitude of Coastal Plan policies, the County's current strong coastal environmental controls, and the emphasis on the community planning process, a range of responses is likely. Following the pilot project, administrative costs would be borne by the agencies having a role in policy implementation and project planning and review. Staffing commitments equivalent to one full-time coastal planning coordinator and liaison person to the Coastal Commission regional office would be required during the three-year period designated for the development of a local implementation program and transition from the permit and appeal process of Plan administration to one of coastal land use management. Continuing requirements would then be integrated with on-going planning and implementation functions. No specific response to appearance and design policies is anticipated beyond what is now occurring, and the Local Implementation Program will consider these policies in the context of other policy areas.

C. TRANSPORTATION, ACCESS AND PARKING AT RECREATIONAL BEACHES \*

1. San Gregorio State Beach

The following case study is of the proposed ultimate development of San Gregorio State Beach. This proposed development provides for the construction of 66 overnight camp-sites, 60 family picnic sites, 5 comfort stations, day-use parking sufficient to accomodate 279 automobiles and 6 busses, plus other necessary support facilities including the development of an on-site 22,000 gallon per day water supply. These proposed facilities would be constructed in stages. The first-stage construction will provide all of the proposed parking facilities and some minor support facilities. In addition the first-stage also calls for removal of the existing parking on the beach and some minimal landscaping (hydromulch planting) of the site.

The analysis of this proposed development vis-a-vis the Coastal Plan's visual policies and some of the transportation policies was done considering the ultimate site development proposed. The method chosen for this analysis was to take the proposed design for each element of the project and compare that design with the requirements of each policy in turn, and then decide if the design was in Good, Fair, or Poor compliance with that policy.

If compliance was not Good an estimate was made of the extra costs required, if any, to bring about Good policy compliance. Basic to this approach is the assumption that all project design guidelines were reached without consideration of the Coastal Plan's policies. This is a valid assumption, since these designs were developed in late 1972, when the Coastal Plan's policies had not yet been promulgated. A display of this analysis and cost estimate is given in Table 3.\*\*

The basic conclusion to be derived from this analysis is that this proposed development, for the most part, does conform to the visual policies of the Coastal Plan. This was accomplished not because of any consideration of Coastal Plan policies, which were non-existent when this project was designed, but because of conformance to the then existing guidelines of the Department of Parks and Recreation, the Office of Architecture and Construction, and the California Environmental Quality Act, to name a few.

The extra costs for Good compliance with the Coastal Plan's Policies would be \$25,000-\$30,000, or less than 2% of the total construction monies spent for the ultimate development of this beach. Even this small increase in costs might not be needed if the visual policies had been used as a factor in the planning and design process.

During the analysis of this project some points of concern other than conformance to visual policies were noted. The major point noted was the discrepancy between sizing of the parking

\*Case study by Gerry Finn.

TABLE 3

	Project Compliance with Policies			Extra Costs Required for Goal Policy Compliance		Comments
	Good	Fair	Poor	Yes	No	
44		✓		✓		Extra costs would be on order of 2% of Total Construct Price (\$25,000)
45	✓				✓	Land was purchased to comply with State's Park & Recreation Policies
46		✓		✓		Amount of extra costs for planning not estimable, but possibly could be offset by reduced implementation costs.
48		✓		✓		About \$2,000 cost
49		✓		✓		Same costs as for Policy #44
49a	✓				✓	--
49c	✓				✓	--
49d	✓				✓	--
49f	✓				✓	--
49g		✓		✓		Same costs as for Policy #44
49h		✓			✓	Facilities could be located elsewhere at no extra cost
50	✓				✓	--
50a	✓				✓	Facilities provided because of State's Park & Recreation Policies
50b	✓				✓	" " "
51		✓			uncertain	A change of construction materials will not necessarily increase construction or maintenance costs
52			✓	✓		Same costs as for Policy #44

TABLE 3 (contd.)

	Project Compliance			Extra Costs?		Comments
	Good	Fair	Poor	Yes	No	
53	✓				✓	--
53a	✓				✓	--
53b			✓		✓	--
54	✓				✓	No extra costs involved with this
54d	✓				✓	--
55a	✓				✓	--
55b	✓				✓	Already included as part of State Architect's guidelines
56		✓		✓		Same costs as for Policy #44
99b		✓		✓		Provision of bicycle safe-keeping facilities for 20 bicycles - about \$1,000. Additional parking will cost approximately \$250/space (auto)
104d	✓			✓		Extra costs would come about if expanded parking, etc. to provide greater access
105		✓		✓		Same as for Policy #44
105a	✓				✓	--
105b		✓		✓		Same as for Policy #44

facilities and design capacity of this park. The present design capacity of San Gregorio State Beach is 1,380 persons,\* yet the capacity of the proposed parking facilities is only 279 automobiles and 6 busses, or 1,193 persons if the figures 3.2 per vehicle for recreational trips and 50 persons per bus are used in the calculations. This means that with the parking lot at 100% capacity the recreational facilities can only be utilized at 86% of present capacity, and when the ultimate development is reached, utilization of the recreational facilities will be at only 60% of the then 1,984 person capacity. The preceding analyses assume that the local "no parking" laws will be strictly enforced and do not account for bicyclists.

The disturbing part of this revelation is the seeming lack of consideration of existing studies which point up the fact that parking capacity, not highway capacity, is the limiting factor in the provision of recreational opportunities along the San Mateo Coast Corridor. This attitude would be understandable if transit service were available or if transit service would be available in the future, but neither case exists here.

There are two basic strategies available which would relieve the parking problem and not require more area for parking. The first is an increase in the number of parking spaces, and the second is an increase in the number of persons per vehicle using the parking facilities.

It might be possible to increase the number of parking spaces available by reducing the minimum area per parking space for some percentage of the spaces. This strategy reflects the present changes in automobile size and the increasing percentage of compact cars in use. In this same vein a more intensive design review process could possibly produce a more efficient parking lot pattern with an attendant increase in the number of spaces available. A 10% increase in available spaces could result in 95% utilization of present day recreational facilities and 68% utilization of the ultimate recreational facilities.

The second strategy available, increasing the number of persons per car, could be accomplished by not allowing vehicles to use the parking facilities if they had less than some minimum number of occupants (say 2 or 3). It is also possible to raise the per vehicle occupancy rate by increasing the number of bus spaces available. However, the problem with this approach is that the major portion of the facilities to be provided at this beach will be sized for families, not large groups, which, in turn, limits the need for bus parking. If a 10% increase in the number of spaces available due to implementation of the first strategy is assumed then for parking capacity and recreational capacity to be

\*Hammond, Recreation Travel Analysis, p. 22.

equal, an occupancy rate of 4.3 persons per automobile is required upon completion of stage one and an occupancy rate of 5.5 persons per automobile is required when the ultimate development is reached.

Both of these automobile occupancy rates seem too high to ever be realized. The conclusion is that if parking and recreational facilities are to be equivalently sized, either more on-site parking must be provided or parking along Highways 1 and 84 must be allowed. On-site parking is the more desirable of the two, as it does not decrease highway capacity and increase associated traffic safety problems.

To equalize parking capacity and recreational capacity after stage one is completed will require the construction of approximately 110 more parking spaces than now planned, and when ultimate development is reached, another 125 parking spaces will be required. These two additions will bring the total number of parking spaces available up to 514 auto spaces, 6 bus spaces, and 12 camp-site spaces, or parking capacity sufficient for 1,984 persons. The cost for each auto parking space is approximately \$300, but this cost should not be charged to any of the Coastal Plan's policies; rather it should be charged to the concept of balanced design which should have been included in the original plans.

A minor point of concern is the lack of any provisions for bicycle safekeeping. Although the number of bicyclists now using the facility is small, those using transport modes other than auto should not be discouraged in that use by lack of suitable facilities, particularly when the costs for providing their needs is so small and the shift of transportation modes is encouraged by Policy 99b.

In sum this project, San Gregorio State Beach, conforms quite well to the Coastal Plan's visual policies in spite of the fact it was designed before those policies had been promulgated. In those instances where conformance is lacking or not quite complete, a relatively small cost, 2% or less of total construction cost, will bring about the required conformance to the Visual policies. On future projects, this percentage might be reduced, as the policies would then be included in the design criteria, and not be an afterthought as they now are.

## 2. Hoover Ranch Acquisition for Big Basin Redwoods State Park\*

### a. Problem

The problem for the Hoover Ranch case study was defined as follows: apply visual, parking, and trail policies of the Coastal Plan to the site to identify alternative parking and comfort station locations for greater beach use. The proposed State Park acquisition area is shown in Figure 2.

### b. Analysis

Based on the Waddell Creek Report by Hecht and Rusmore and a site visit, it was determined that the lower Waddell Creek Valley is a highly sensitive ecological area. Views of the site and the beach from Route 1 in both directions were noted, and 6 alternative sites for parking were identified. The alternatives were compared according to physical convenience, economic feasibility, and environmental compatibility. Table 4 shows the evaluation of alternative parking sites and Table 5 presents cost estimates for parking site development. The alternative parking sites are shown in Figure 3.

Alternative A: (On both sides of western road, near the entrance to the west road - see sketch - close to Route 1; on level ground; could accomodate up to 100 cars).

This site would be second-best in terms of physical convenience to the beach, would risk some disturbance of the tule marsh to the north east (paving, water run-off containing chemical pollutants from vehicles, foot traffic), and would be fairly visible to travelers on Route 1, both north and south. Screening (i.e., landscaping and/or earth berming) would improve the visibility (from Route 1) problem somewhat, but would not eliminate it completely.

Alternative B: (old quarry site; away from Route 1; next to western road; on level ground; approximately 50 cars).

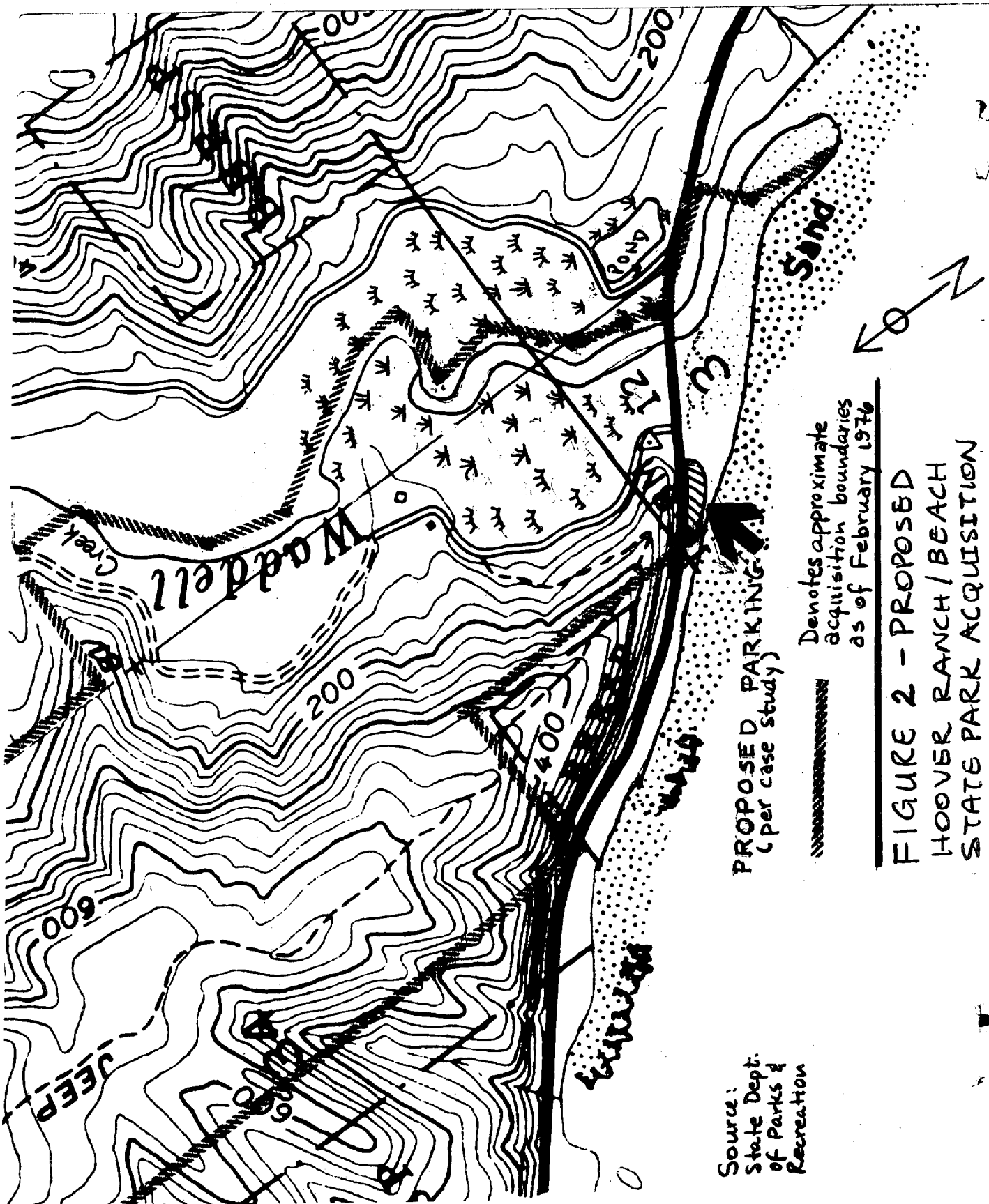
This site would not be as convenient to the beach because of its distance (1/4 mile from the beach), and would accomodate only approximately 50 cars. This site would not present as many environmental problems because of its distance from the creek and tule marsh, and would be preferable in terms of achieving low visibility from Route 1. Costs would be higher since there would have to be access road improvements over a longer distance.

Alternative C: (meadow site; away from Route 1; next to western road; on level ground; approximately 250 cars).

---

\*Case study by Irene Torrey, AIP, and Barbara Rusmore.

FIGURE 2



Source:  
State Dept.  
of Parks &  
Recreation

FIGURE 2 - PROPOSED  
HOOVER RANCH / BEACH  
STATE PARK ACQUISITION



Table 4 . Alternative Parking Site Evaluation  
(see Figure 3)

<u>Sites</u>	<u>Physical</u>	<u>Economic</u>	<u>Environmental</u>
A	+	+	-
B	-	-	+
C	-	-	-
D	-	-	-
E	+	+	-
F	+	-	-
G	+	+	+

Note: The "+" denotes a relatively more beneficial effect, and the "-" denotes a relatively more adverse effect.

This site is even further away (3/4 of a mile) than B, but would accomodate up to 250 cars. Environmentally, there may be negative impacts caused by paving (destruction of surface vegetation and wildlife habitat) and polluted water run-off going into the creek. This site would not be visible from Route 1. This site would also have higher road improvement costs.

Alternative D: (meadow site; away from Route 1; next to eastern road; approximately 250 cars; not within area presently proposed for acquisition).

Same physical features and impacts as C, but on east side of the creek, and closer to Route 1 and therefore more convenient. This site is outside of the area presently proposed for acquisition.

Alternative E: (on the east side of the creek; near Route 1; served by eastern road; approximately 75 cars; not within area presently proposed for acquisition).

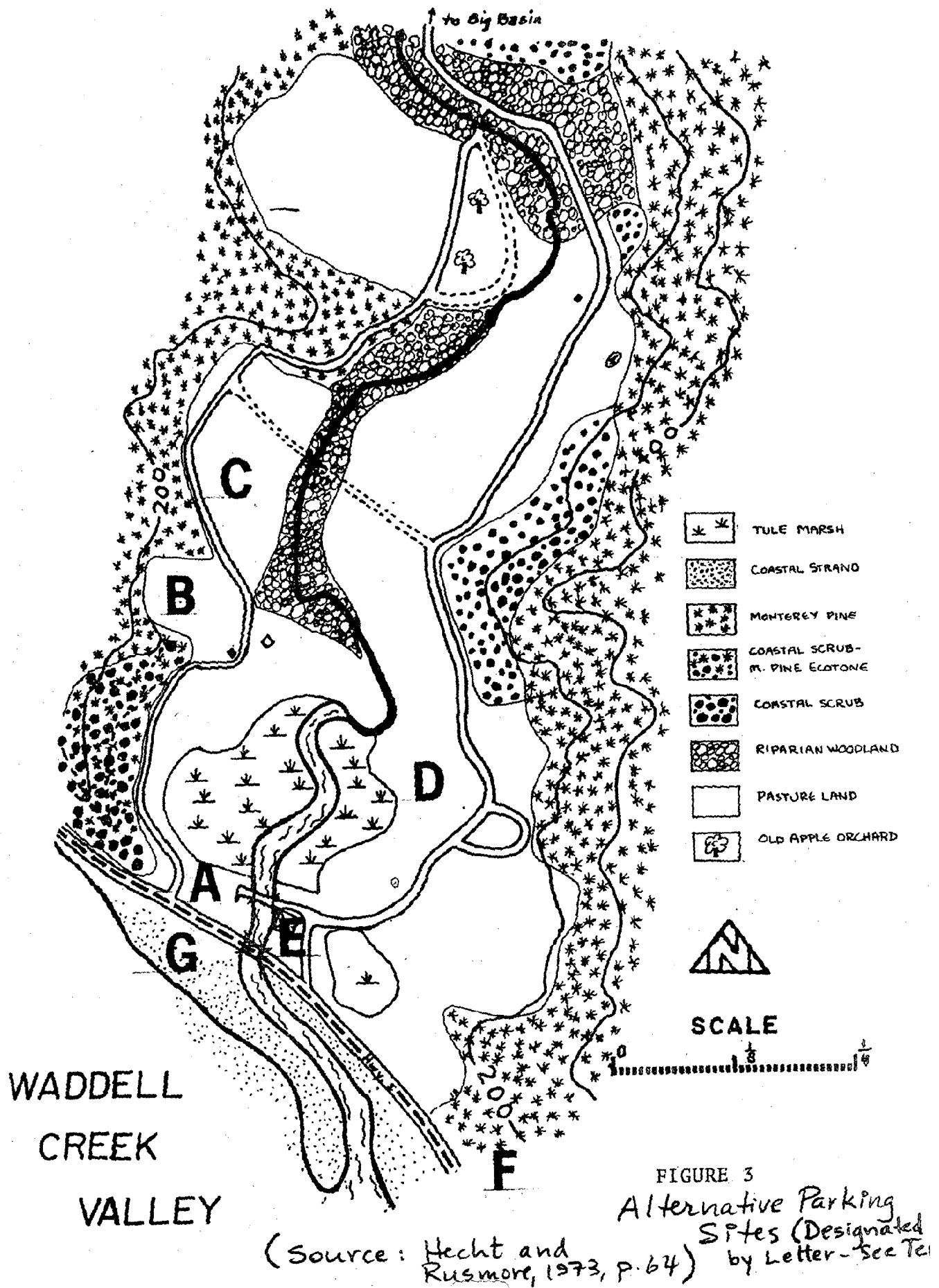
This location would be the most appropriate for the main entrance (including a ticket gate and park office facilities) because of the desired visibility (from the road) of these facilities. The parking location would be second-best (equal to that of A, in terms of convenience to drivers), and would accomodate up to 75 cars, using mostly minor extensions of existing paved

Table 5. Parking Site Cost Comparison\*  
(see Figure 3)

Alternatives	A	B	C	D	E	F	G
Number of cars	100	50	250	250	75	75	375
Base cost [on-grade] parking lot construction	144,000	22,000	110,000	110,000	73,000	33,000	286,000
Roadway section costs (for 2 lane access road)	-	264,000	386,000	264,000	-	264,000	-
Special roadway embankment costs	-	-	-	-	-	75,000	-
Landscaping	25,000	12,500	62,500	62,500	18,750	18,750	93,750
Additional costs for areas not presently proposed for acquisition	NA	NA	NA	✓	✓	✓	NA
Additional costs for travel to site (labor & materials)	✓	✓	✓	✓	✓	✓	✓
TOTAL	169,000	298,500	558,500	436,500	91,750	390,750	379,750
Costs/Parking stall	1,690	5,970	2,234	1,746	1,223	5,210	1,012

\* For cost estimate of comfort stations and park office facilities (park entrance and ticket gate), refer to State Dept. of Parks and Recreation.

Source: Building Cost Index, 1975 edition.



surfaces. Water run-off into the creek and tule marsh can be expected. This site would be quite visible from Route 1, both north and south.

Alternative F: (small box canyon; near Route 1; next to existing extension of eastern road; approximately 75 cars; not in area presently proposed for acquisition).

This site would accomodate up to 75 cars; it would be physically convenient to motorists and well screened by existing vegetation and land form. Access would be off the main entrance road and would require additional paving and embankments for the parking entrance road itself. Some run-off into the nearby tule marsh could be expected and the new paving would involve more surface vegetation destruction than Site E, which uses mostly existing paved surfaces. This site is not within the presently proposed acquisition.

Alternative G: (beach side of Route 1; very close to Route 1; high visibility; 250-375 cars; within area now proposed for acquisition).

This alternative would accomodate several hundred cars (more than 250), and would be the most convenient in terms of direct beach access. Parking here would be the cheapest (in per space costs), since the lot already exists (and is presently heavily used by trailers). However, this site is objectionable from the point of view of visibility, because it is a highly visible site and vehicles on it would block views of the ocean. Screening would not be desirable as it would serve to block more views of the ocean. The most desirable coastal view is that of waves breaking against the rocks and beach. Therefore, screening of visual distractions (which also hide this view) is not desirable. Run-off into the mouth of the creek would be less objectionable here than in the fresh water part of the creek. This alternative and its merits should be compared to any one or all (because of its site) of the previous alternatives (A - F).

Two final comments on the evaluation of parking areas are worth making:

1. All parking schemes could have a drop-off/pick-up zone on the seaward side of Highway 1 to make picking up and dropping off of passengers easier.
2. There is an inherent danger in having to walk across Highway 1 and make left turns into all parking areas on the landward side of Highway 1. Therefore, all plans for parking areas on the landward side would need pedestrian crosswalks and other appropriate traffic regulating devices and warnings for drivers and pedestrians.

### Comfort Stations:

For the convenience of beach users, these have to be close to the beach (i.e.: on beach side of the highway). To reduce visibility, the comfort station structure(s) could be placed into the ground on the mudstone, and earth berms a few feet high could be created around the exterior walls. Below grade placement on the beach is usually not feasible, due to occasional inundation, drifting sand and difficulty of access for handicapped persons.

Within the existing proposed acquisition, the sites which would best respond to the visual policies would be B, C, and D. If, however, acquisition were to be considered to the east side of the creek, site F would have a higher preference, because it would be concealed from the road and very convenient. However, this alternative would also be quite costly per space, because of the roadway improvements and embankments required.

It should be noted that some of the costs which would be attributed to the Coastal Plan visual policies would be incurred even if the Plan did not exist, and a policy of "good design" were to prevail. For example, screening of parking areas on the land side of Route 1 and making the comfort stations unobtrusive in appearance in the beach side of Route 1 would be "good design" practice, normally followed, even if the Plan did not exist.

### c. Evaluation

The Hoover Ranch offers a wide variety of coastal landforms including the beach strand and creek mouth, sand dunes rising to coastal bluffs, an undisturbed freshwater marsh and steep, wooded hillsides surrounding the valley pasturelands. This diverse environment contains an uncommonly rich mixture of plant and animal life. The marsh and wetlands provide one of the few remaining healthy environments for many species of resident and migratory birds. Coast Highway 1 crosses the valley mouth and two small dirt roads lead up the valley, joining a mile upstream.

Development of visitor facilities must be carefully located and designed to minimize disruption of the life processes in the marsh area. In this case, the need to maintain the fragile natural ecosystem may need to outweigh the desire to conform with the visual policies and guidelines of the Coastal Plan. Though the least visible parking sites would be located up the valley, increased foot and vehicular traffic along the existing dirt roads would make the marsh uninhabitable for many species of waterfowl. A pedestrian trail could be built on the west side of the valley that would provide bird watching areas while being screened by the pine forest. This trail would link up with the existing Chalks fire trail and would provide foot access to the upper valley and Big Basin. The existing roads should be reserved for service vehicles.

Minimal facilities, parking areas, and restrooms could be located alongside Highway 1 north of the valley. This area encompasses from five to six acres and is on a shelf of Santa Cruz Mudstone, ranging in height from two to ten feet above the beach. It is currently used for parking and at the southern end provides vehicular access onto the sand dunes and beach. It is highly visible from the road, and at the southern end, the waves can be seen across the lot. Parking could be restricted to the northern area, and earthen berms could be constructed from landslide materials available across the highway to the north. With appropriate landscaping, the parking area could be largely screened from view. The loss of a hundred yards of ocean view and an occasional glimpse of parked cars is a small tradeoff for maintaining the marsh area intact.

Facility development may present a problem. A water system would have to be developed from up the valley. Sewerage and wastewater disposal probably could not be handled by conventional means due to the close proximity of the ground water table. However, a dry, digester-type toilet system, minimal water use facilities and a storage tank that would be periodically pumped out could minimize this problem.

If extensive visitor facilities are desired at the beach end of Big Basin State Park, the coastal bluffs to the south of the valley, served by Last Chance Road, provide the best location. The bluffs are a relatively stable ecological environment, adaptable to intensive human use. Access into Hoover Ranch and Big Basin as well as the coastal strand could be easily provided. The area however, has not been included in the State Park acquisition, and perhaps consideration should be given to extending or revising the acquisition area.

D. HOUSING DEVELOPMENT ON THE SONOMA COUNTY COAST, INCLUDING  
SEA RANCH\*

1. Policy Analysis

Listed below in Table 6, in a general way, are those policies which would most likely have a cost impact on specific development activities as related to housing construction.

Table 6 - Housing Costs

Development Cost Factors	Policies Likely to Cause Higher Costs
Design Costs	44-49, 49c-50a, 55, 55b-d, 56
Land Costs	46, 49a-50b, 53, 53b
Site Preparation	49a-h, 50a, 52, 53-55b, 56
Construction Methods	51, 53, 53a
Construction Materials	49c-49g, 51
Landscaping Methods	49a,b, 49h-50a, 51-53a,b
Landscaping Materials	49b-50a, 51-52
Utilities Costs	47b,c, 49a-h, 53-56
Accessibility (roads)	49-49f, 50-50a, 53a
Administrative Costs (zoning, permits)	44-49, 49c-56

Without knowing the magnitude or location of a particular project, the effects listed here are intended as potential impacts. It is clear, even after cursory analysis, that design, land acquisition, and administrative activities will be the development factors more seriously affected than other construction activities, in terms of cost increase. This will be especially true in relation to the more general, broadly stated policies, as opposed to the more specific, location-oriented policies.

In an attempt to focus on specific policy impacts on housing development, two interviews were conducted with knowledgeable public and private officials in Sonoma County. The interview parties were:

1. Mr. Wesley Vail, Senior Planner, Current Planning, Sonoma County Planning Department, and
2. The Sea Ranch Association
  - a. Warren G. Haight, President, Oceanic Properties, Inc.:
  - b. Mary N. Allen, Assistant Secretary and Project Manager, Oceanic California, Inc.
  - c. William E. Rand, Staff Consultant, Sea Ranch Association.

The results of these interviews were recorded on detailed forms, and some of the main findings are highlighted below.

\*Case study by Mark Trembley.

## 2. Reactions and Economic Consequences

a. The biggest cost to government will be staffing for the design review process as well as field inspection. For example, 2 designers (landscape architect and architect) will cost each local agency about \$40,000 a year. It is not likely that people with these skills will make long-term, time-consuming commitments on a volunteer basis.

b. Design guidelines will require citizen builders to hire professional designers rather than relying on contractors.

c. Local government desperately needs a more detailed set of design standards from the state to facilitate interpretation of policies.

d. Policies should promote clustering, although this technique is not as appropriate in rural areas as in urban areas where economies of scale and infrastructure cost savings are greater.

e. Many of the Coastal Plan policies confirm existing local policies, e.g., undergrounding utilities in subdivisions. Others are too inflexible and should use "should" rather than "shall." Sea Ranch design policies are more restrictive, on the whole, than the Coastal policies.

f. Sea Ranch policies result in about a 10% increase per unit of residential design and construction costs. Present costs run up to \$45/square foot, as compared to an average of \$30/sf in the surrounding area.

g. In general, there is a reluctance to express benefits in other than broad qualitative terms. For example, design policies will induce a more attractive, higher-valued housing product which would yield greater tax revenues. On the other hand, such policies would decrease the volume of construction and exacerbate the high construction unemployment rate along the coast.

h. Apparent quantitative cost effects should not necessarily take precedence over benefits that can only be stated in qualitative terms. For example, it may not be possible to assess the revenues generated by increasing numbers of tourists who will be drawn to the coast as a scenic attraction in the long-range future.

## 3. Recommendations

### a. Visual Analysis Mapping

It is imperative that phrases like "significant



views," "key viewing points," and "highly scenic areas" be clearly defined and located as mapped expressions. The current vagueness regarding these issues may result in highly subjective and capricious interpretations on the part of local governments which will undermine the whole intent of the visual policies section of the Plan. Several illustrative examples regarding the above concepts are indicated on the following maps. As demonstrated, a clearly defined system of visual analysis should be employed to record and identify essential visual attributes. From this analysis, a mapped expression of policies relating to the identification of important corridors should be determined (See Figures 4 and 5. It is critical to use such a method to form the basis of a rational open space system designed to preserve desired visual qualities.

To put the objective here in more straightforward and colloquial terms, if the voids are controlled, the solids will fall into place.\* It would be entirely inappropriate to attempt to implement visual preservation on the Coast by controlling the solids (structure, bulk, height, placement) in a parcel-by-parcel piecemeal fashion. The result following such practices will be left-over, uncoordinated "negative" spaces that conflict with the Plan's original objectives.

The recommended visual mapping, as suggested on the attached maps, or similar methods, should be carried out by landscape architects who are trained in visual analysis. It is estimated that such a preliminary program for the entire California coast could be carried out in 4 to 6 months at a cost of \$50,000 - \$100,000.

#### b. Additional Guidelines for Policy Interpretation

Fences: The existing policies do not restrict the type, height or color of fences. Since these structures could be the most visually prominent or disruptive elements as viewed from the Coast Highway, restrictions regarding fences should be specified. Concrete block walls should be excluded. Fences should be low, open, preferably of unpainted wood, left to weather naturally. They should not conflict in height with important views from the road.

Landscaping vegetation can enhance portions of the coastal area, but height of plant materials should be controlled so that important views are not blocked.

\*The "voids" are not really devoid, but denote natural scenery elements,

FIGURE 4

North  
Central

MENDOCINO COUNTY  
SONOMA COUNTY

Gualala

MILE 1

Sea Ranch

Stewart's Point

9 Richardson, Kruse  
Ranches

Salt Point

Ocean Cove

Willwater Cove

**KEY:**

Note: Whereas this map is for conceptual purposes, actual field analysis would use a base map scale of no less than 1"=2000'. Viewing stations would be selected at 1/2-1/2 mile intervals in combination with dominant viewing points. A continuous viewing sequence could, in part, be recorded by using stereo/pair air photos.

**SEQUENCE NOTATION ANALYSIS**

VIEW STATION (SOUTHBOUND) ●

PANORAMA ↔

FOREGROUND (1/4-1 MI.) VIEW →

MIDDLEGROUND (1-2 MI.) VIEW →

BACKGROUND (2-3 MI.) VIEW →

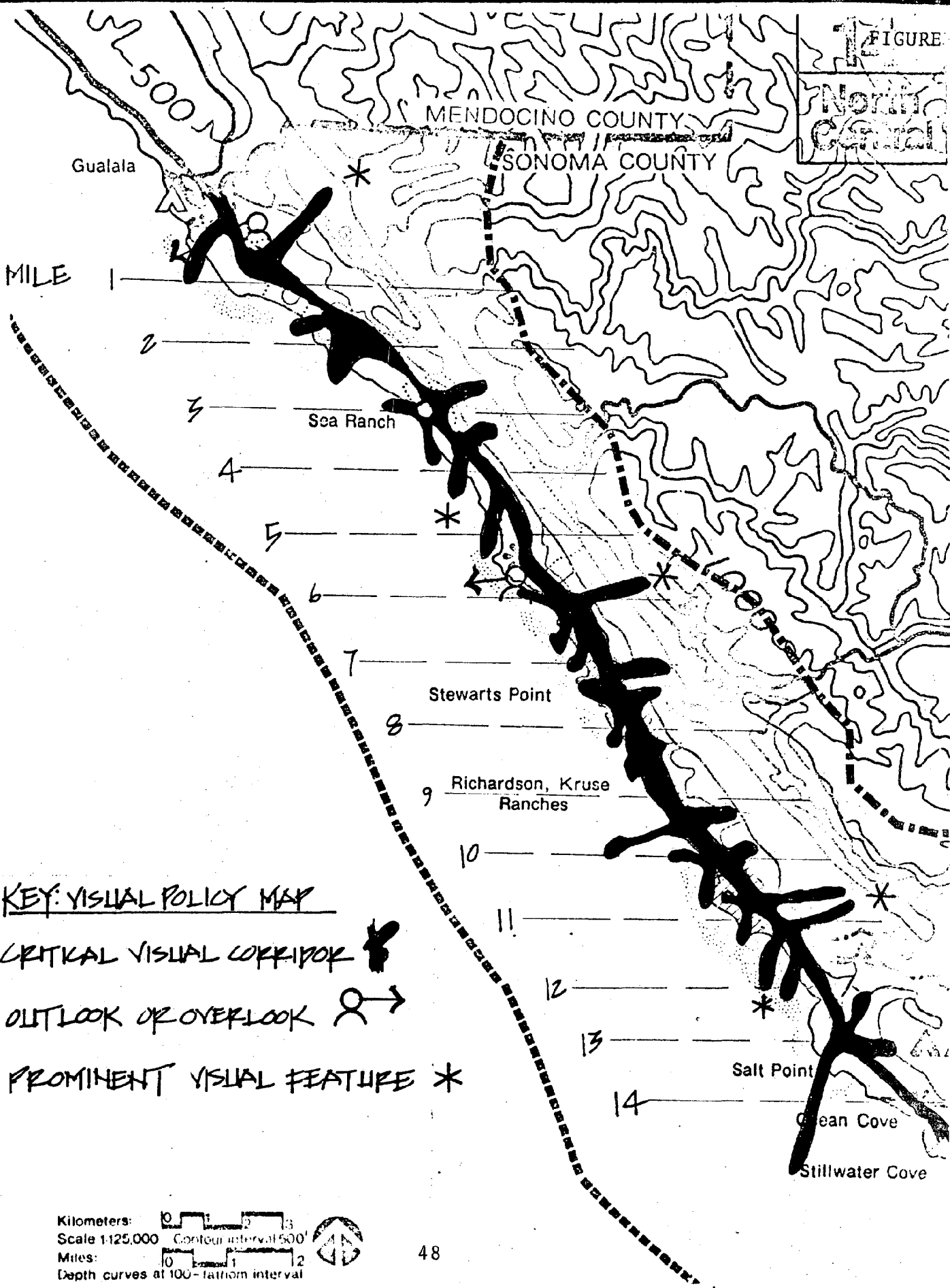
ENCLOSURE, VIEW SCREENED

PROMINENT VISUAL FEATURE \*

Kilometers: 0 1 2 3  
Scale 1:125,000 Contour interval 500'  
Miles: 0 1 2  
Depth curves at 100-fathom interval



FIGURE 1  
North  
Central



KEY: VISUAL POLICY MAP

CRITICAL VISUAL CORRIDOR

OUTLOOK OR OVERLOOK

PROMINENT VISUAL FEATURE \*

Kilometers: 0 1 2 3  
Scale 1:125,000 Contour interval 500'  
Miles: 0 1 2  
Depth curves at 100-fathom interval

## E. UNDERGROUNDING OF UTILITY DISTRIBUTION FACILITIES \*

Policy 55, "Design Guideline: Utility Structures," deals partly with undergrounding of distribution facilities (55b), and these present two cases: new and existing. The impacts of the policy on the two cases will be considered separately. Only power lines will be dealt with in this assessment, but the information is also valid for telephone and other utility lines.

### 1. New Facilities

a. Policy: "New distribution facilities and service connections shall be placed underground except where undergrounding would be inconsistent with sound environmental planning or where the cost of undergrounding would be so high as to deny service" (Coastal Plan, p. 74). Distribution facilities include:

- distribution lines which carry power from the utility's distribution center throughout its service area;
- service connections which carry power to the customer's buildings from the utility's distribution line.

b. Response: Undergrounding is currently required by the California Public Utilities Commission (PUC) for all new distribution facilities:

- to residential subdivisions (5 or more lots) and to residential developments (5 or more dwelling units in 2 or more buildings located on a single parcel of land) (PG&E Rule #15.1), except when the minimum parcel size is 3 acres or more and no more than one single-family dwelling is allowed on each parcel of 3 acres or less (PG&E Rule #15);
- to commercial and industrial developments; and
- "in proximity to any highway designated a State Scenic Highway...and which would be visible from such scenic highways if erected above ground" (Section 302, Public Utilities Code: See Exhibit A).

These regulations imply that the only facilities which Policy 55b would require to be undergrounded which are not required to be undergrounded by the PUC are new distribution facilities to individuals who are not within 1000 feet of a designated State Scenic Highway.

PG&E has been recommending that any new distribution facilities in proximity to any section of a highway which is being considered for designation as a State Scenic Highway also be considered for undergrounding. In response to the passage of the California Coastal Zone Conservation Act of 1972 (Proposition 20), the Regional Coastal Commissions have been requiring, as a matter of course, that all new distribution facilities be undergrounded which are:

- within 3000 feet of the coast; or
- seaward of Highway 1.

\*Case study by William Ziefle.

Since the requirement for undergrounding new distribution facilities may be lifted if the California Coastal Plan is not adopted and the mandate of Proposition 20 expires, it is appropriate to attribute the costs of undergrounding these facilities to the Coastal Plan.

The two qualifying clauses in the policy statement regarding environmental and economic costs of undergrounding reduce the impacts of the policy considerably. The North Central Coast Regional Commission has allowed PG&E to install a number of new overhead facilities to individuals when the lines could be easily camouflaged in wooded areas. Installation of overhead facilities also has been allowed in some instances when an individual's property was far from the utility's nearest distribution line and undergrounding would have been quite expensive.

In those instances where undergrounding would be required by Policy 55b, the individual customer would be required to pay three-fourths of the difference between the cost of installing the undergrounding facilities and the cost of installing overhead facilities (PG&E Rule 15). The utility absorbs the remaining one-fourth of the cost. When more than one utility shares the trench, the trenching costs are shared by the utilities equally on a per-foot-used basis.

#### c. Economic Indicators

The indicators of the costs which would be incurred as a result of implementing the first part of Policy 55b are of two types:

- factors which contribute to the cost of undergrounding facilities on a given site, and
- the number of sites to which the policy would apply.

Site factors include:

- trenching costs,
- distance from existing distribution facility,
- distance from the utility's service center, and
- materials costs (type of facilities: primary or secondary).

Trenching costs vary tremendously from site to site depending principally upon the type of soil located on the site. Trenching costs range from less than \$3 per foot to more than \$20 per foot depending upon how rocky the soil is and, consequently, the type of machinery needed to dig the trench; the number of men needed to run that machinery; whether the soil can be used to cover the conduit in the trench or whether it must be hauled away and backfill must be hauled to the site; whether paving must be removed and replaced; and whether the trench must cross a drainage ditch. Undergrounding costs may be very high if an individual is far from the utility's nearest distribution line. High transportation costs may result if the individual's property is located far from the utility's service center. The materials used in underground facilities are usually significantly

more expensive than materials used in overhead facilities. Primary lines carry higher voltages than secondary lines and require more expensive materials when undergrounded than do secondary lines.

The number of sites to which the policy would apply cannot be determined accurately. To the extent that new development will occur in locations which already are serviced by distribution facilities, costs will be substantially less than if development occurs in areas not currently served. Thus, only sites outside of subdivisions and developments would be subject to additional costs.

d. Cost Assessment: It is not possible to assess the overall costs which would result from this part of Policy 55b. However, the following conclusions can be drawn:

- The policy will not result in any additional direct costs to individuals who locate in residential subdivisions or developments or within 1000 feet of a Designated Scenic Highway.
- In virtually all cases where undergrounding is required by this policy, the facilities would be more costly than overhead facilities.
- Three-fourths of the difference between the costs of undergrounding and of installing overhead facilities would be paid by the individual(s) receiving the service. The other one-fourth of the difference will be shared by all of the customers of the utility.
- Costs to an individual could range from a few hundred to several thousand dollars.
- The costs resulting from the policy may be partially offset in the future by savings to the customer when the utilities underground their existing facilities.

## 2. Existing Facilities

a. Policy: "Cities and counties shall develop programs for undergrounding existing distribution facilities and service connections in scenic and highly visible coastal areas as part of subsequent planning." (Coastal Plan, p. 74)

b. Response: The decision as to which facilities would be undergrounded under the provisions of this policy depends upon which sites would be designated as scenic and highly visible and these are somewhat at the discretion of local government. In accordance with the directives included in Proposition 20, the Regional Coastal Commissions have considered requiring that certain existing distribution facilities which will serve new developments be undergrounded. The undergrounding of existing facilities has, however, received considerably less emphasis than has the undergrounding of new facilities. The design/review process described in Policy 47a would offer an alternative

to undergrounding in those situations where distribution lines could be relocated to out-of-site locations. Undergrounding of existing facilities can have significant environmental impacts, for example, when trees must be cleared and kept out of the path of an underground trench.

c. Economic Indicators: As in the case of undergrounding new facilities, the indicators of the costs which would be incurred as a result of implementing the second part of Policy 55b include site factors and the number of sites subject to the policy.

Site factors are much the same, except that undergrounding would require additional cost, to remove existing poles, lines, etc. Costs of \$100,000 to \$200,000 per mile are common. A recent study by PG&E indicated that the undergrounding of four secondary power lines over a distance of 0.45 miles in the Timber Cove development would cost approximately \$110,000. Undergrounding 1.75 miles of the primary line would cost about \$300,000. The cost of undergrounding 0.5 miles of primary and secondary lines in the Gleason Beach Assessment District is about \$100,000. It should be noted that the per-unit-distance cost of undergrounding varies greatly within each site. The costs stated above should only be considered as representative of the order of magnitude of costs and should not be generalized to estimate costs at other sites.

The number of sites at which undergrounding would be required is somewhat at the discretion of the local government, which can designate scenic and highly visible areas. The policy also only calls for the consideration of undergrounding in local planning efforts, so the schedule of compliance is at the discretion of the local governments.

When undergrounding is required, the county in which the area is located must form an assessment district composed of those properties in which facilities are to be undergrounded. In some instances the assessment district may receive some funds from the county to help pay the costs of the undergrounding. These funds, given to the counties by PG&E, are apportioned among the counties on the basis of the number of utility customers in the county. When these funds are not available from the county, for example because the development does not meet certain specifications, the landowners within the assessment district are assessed for the costs of the undergrounding. Hence, as with new distribution facilities, the costs are borne by the individuals receiving the service and the other customers of the utilities.

d. Cost Assessment: The overall costs of undergrounding existing facilities as required by Policy 55b cannot be determined. However, the following conclusions are pertinent:

- Costs are likely to be very high for any undergrounding of existing facilities. Costs on the order of \$100,000 to \$200,000 per mile are typical.
- Costs are very sensitive to characteristics of the site.
- Some discretion is allowed the local governments as to which facilities would be undergrounded.
- Low populations in most coastal areas imply that under the current allocation scheme, assessment districts in the areas would receive very few funds from PG&E and thus the burden of undergrounding would fall very heavily on the local residents unless an alternative cost allocation scheme is created.

#### EXHIBIT A

##### Section 320, Public Utilities Code

"320. The Legislature hereby declares that it is the policy of this state to achieve, whenever feasible and not inconsistent with sound environmental planning, the undergrounding of all future electric and communication distribution facilities which are proposed to be erected in proximity to any highway designated a state scenic highway pursuant to Article 2.5 (commencing with Section 260) of Chapter 2 of Division 1 of the Streets and Highways Code and which would be visible from such scenic highways if erected above ground. The commission shall prepare and adopt by December 31, 1972, a statewide plan and schedule for the undergrounding of all such utility distribution facilities in accordance with the aforesaid policy and the rules of the commission relating to the undergrounding of facilities.

The commission shall coordinate its activities regarding the plan with local governments and planning commissions concerned.

The commission shall require compliance with the plan upon its adoption.

This section shall not apply to facilities necessary to the operation of any railroad."



VII. PERSONS CONTACTED

A. California State Legislature, Office of the Legislative Analyst, Sacramento

- Donald Benedict, Principal Program Analyst
- Richard Byfield
- Wayne Keithley, Program Analyst

B. State of California

1. CALTRANS, District 4, San Francisco
  - Virginia Prudhomme, Landscape Department
  - Environmental Planning Section Staff
  - Design Section Staff
2. Office of the State Architect, Sacramento
  - Sam Kaneko, Landscape Architect
3. Department of Parks and Recreation, Sacramento
  - Samuel Halstead, Deputy Director
  - Ken Mitchell, Landscape Architect
  - Jack Hesemeyer, Area Manager, Marin Area (Corte Madera)
  - Wayne Caulkins, Lon Spharler, Bruce Dunbacher
4. Public Utilities Commission, San Francisco
  - Erwin Endres, Senior Electrical Utilities Engineer
5. California Highway Patrol
  - Officer G.H. Hildrin, San Mateo County
6. California Coastal Zone Conservation Commissions
  - a. State Commission, San Francisco
    - William Travis, Assistant Chief of Planning
    - Roderick J. Meade
    - Judy Anderick, Librarian
  - b. North Coast Regional Commission Staff
  - c. North Central Coast Regional Commission
    - Phyllis Faber, Commissioner
    - Michael Fischer, Executive Director
    - David Dubbink, Chief Planner
    - Bob Brown, Planner
    - Gary Holloway, Senior Planner
7. Bay Conservation and Development Commission, San Francisco
  - Kent Watson, Landscape Architect
8. University of California, Berkeley
  - Thomas Dickert, Institute of Urban & Regional Development

- Jens Sorensen, Sea Grant Program
- George Goldman, Cooperative Extension

C. Local Government

1. San Mateo County, Redwood City
  - George Miller, Planning
  - Bill Kritikos, Planning
  - Roman Gankin, Planning
  - Road Department Staff
2. Santa Cruz County, Santa Cruz
  - John Gilchrist, Planning
  - Henry Baker, Planning
3. Marin County, San Rafael
  - Bob Harrison, Transit District
  - Brian Whittenkiller, Parks and Recreation
  - Kathy Ohlson, Planning
  - Public Works Staff
4. Sonoma County, Santa Rosa
  - Wes Vail, Senior Planner
  - John Sciborski, Public Works-Civil Engineer
5. Mendocino County, Ukiah
  - Larry Mitchell, Planner
6. Humboldt County, Eureka
  - Larry Henderson, Associate Planner
7. Del Norte County, Crescent City
  - Ernest Perry, Planner
8. Metropolitan Transportation Commission, Berkeley
  - Margaret Woodring, Golden Gate Recreational Travel Study (GGRTS)
  - Margot Parke, Citizen Liaison Consultant, GGRTS
  - Nancy Hammond
  - John Warren, Planning and Analysis Program Manager
9. Golden Gate Bridge, Highway and Transit District, San Francisco
  - Bruce Richard
10. Association of Bay Area Governments, Berkeley
  - Chris Hartzell, Land Resources Division

D. Federal Government

1. National Park Service, San Francisco
  - Douglas Nadeau, Planning Coordinator, GGNRA

E. Private Sector

1. Pacific Gas and Electric Company
  - Dave Waterworth, Industrial Power Engineer, San Francisco Division
  - Steve Brodnansky, District Marketing Supervisor, North Bay Division
  - Donald E. Marquardt, Land Planning Analyst, North Bay Division
  - Robert W. Figone, District Representative, North Bay Division
  - Claude Parker, Marketing Manager, Humboldt Division
  - John Ulrich, Commercial Analyst, San Francisco
  - John Torrene
  - Ray Sullivan, North Bay Division
2. Pacific Telephone and Telegraph Company
  - Larry Roberts, Communications Specialist
  - Bob George, Engineering Manager
  - Ray Nordell, Engineering Manager, Peninsula District
3. Sea Ranch
  - Mary Allen, Manager of Sea Ranch
  - William Rand, Staff Consultant to Sea Ranch
  - Warren Haight, President, Oceanic Properties, Inc.

AUTHOR <i>CA. Legislative Analyst</i>	TITLE <i>Review of California Coastal Plan</i>	BORROWER <i>Bar</i>	VOLUME NO. <i>I II</i>	DATE BORROWED <i>May 4, 78</i>	ROOM NO. <i>332</i>	EXTENSION
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Section 2 -

THE CALIFORNIA COASTAL PLAN:

ALTERNATIVE WASTE MANAGEMENT  
STRATEGIES FOR UNDEVELOPED  
COASTAL AREAS TO IMPLEMENT THE  
COASTAL WATER QUALITY POLICIES

Edited By Jerry Yudelson

Contributions By:

Patrick Ferraro  
Peter Warshall, Ph.D.  
J.T. Winneberger, Ph.D.

## Section 2

### THE CALIFORNIA COASTAL PLAN:

#### ALTERNATIVE WASTE MANAGEMENT STRATEGIES FOR UNDEVELOPED COASTAL AREAS TO IMPLEMENT THE COASTAL WATER QUALITY POLICIES

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## I. SUMMARY

This report analyzes the California Coastal Plan's water quality and watershed management policies in essentially open, undeveloped areas. For these areas, the primary concerns are water use and wastewater management for recreation areas of varying size and for individual homes and small housing developments (up to 40 units). The report assesses the technical and economic feasibility of improved waste conservation and wastewater management practices in the coastal zone through analysis of the relevant Coastal Plan policies, development of design responses to these policies and evaluation of economic effects of alternative low-discharge, low-energy-use waste disposal methods.

Since the Coastal Plan policies under discussion do not provide direct guidance or guidelines, the procedure adopted for this study was to develop some promising alternatives for policy implementation and to study some of the effects of adopting these alternatives.

For reducing costs of public and private facilities and for improving water quality, the basic design responses available are water conservation (reducing sewage quantities); source separation of sewage (into "black" water, that directly contaminated by fecal matter, and "grey" water, from laundering, dishwashing, and hand-washing, etc.); changes in waste handling methods (use of dry storage or composting-type toilets for individual homes or remote low-intensity recreational areas); water reclamation and recycling through above-ground land disposal of partially treated sewage (especially for recreational areas); and use of on-site subsurface disposal systems (septic tanks and leachfields) for individual homes, subdivisions and moderately used/road-accessible recreational developments.

For water conservation, the most acceptable, usable and economic systems, roughly in order of priority, are: faucet aerators; pressure-reducing valves; flow-limiting shower heads and valves; toilet-tank volume reducers, reduced flush devices; low-flush systems and dual-cycle toilets; flow-limiting valves for sinks; vacuum toilet flush systems for multiple homes; restrictions on garbage disposal use; and washwater-recycle toilet flushing systems. In water-short areas of the open coastal zone, it is suggested that these devices and systems could be made mandatory, especially for public recreational facilities. In addition, various public relations aspects of exemplary public agency water conservation programs should be used to develop water conservation practices in public recreational facilities.

One alternative to full-scale sewage treatment is to filter and recycle wastewater ("grey" water) from sinks, showers, kitchens and laundromats at heavily used recreational facilities. This grey water can be recycled for landscape watering,

fire protection, storage and air-conditioning. Separation of grey water from toilet water should always be considered in planning for public recreational development.

Use of dry toilets (especially well-vented pit privies) should be allowed for remote areas of recreational developments, especially where service for septic tanks, chemical toilets or sewer pipe installation would require cutting new roads or enlarging existing trails. This procedure would both save public money and prevent intrusion of roads into remote areas of the coastal zone. Coastal zone waste management should also be flexible enough to allow dry toilets, especially composting toilets, for use in low-density residential developments. Properly constructed, the composting privy is a sanitary, leak-proof method of treating and recycling human waste.

In recreational facilities, especially at public parks and beaches, every effort should be made to minimize water use in landscaping, by use of native or naturalized (low-water-using) plant materials and by recycling treated wastewater for irrigation (either through subsoil drain fields; small treatment lagoons; or active spray, flood or drip-irrigation systems). Above-ground land disposal recycling of sewage effluent was shown to create a significant cost savings over other standard treatment and disposal systems proposed for Angel Island State Park. Adoption of a land disposal system would probably have saved considerable public funds compared to the expensive system of secondary treatment with ocean discharge used to serve Russian Gulch State Park.

Use of an on-site wastewater disposal system (septic tanks and leach fields) is a proven low-cost, low-energy, moderate-maintenance sewage management technique, which is widely applicable for coastal zone use in single homes, subdivisions up to 1,000 units and recreational facilities of moderate area and land use intensity. Failures of septic-tank/leach field systems are due more to unreliable construction and poor maintenance than to poor soils. In fact, serviceable soil-absorption systems can be constructed in many areas where existing soil maps show "poor" suitability for such systems. Public responsibility for wastewater disposal practices, through septic tank management districts, can make on-site disposal systems workable in most undeveloped (and also developed) coastal areas.

Implementation of Coastal Plan water quality policies should seek to minimize extensive, expensive, high-energy-use sewage treatment plants (with ocean or stream disposal) and maximize use of lower-cost, on-site, above-ground and subsurface treatment and disposal systems. In addition, federal requirements for "zero discharge" of wastewater within ten years make further investment in sewered wastewater treatment and disposal systems financially unwise for public recreational facilities in the open coastal zone areas, since on-site disposal systems may soon be required in any case.

## II. INTRODUCTION

The Coastal Plan policies to maintain, manage and restore ocean water quality (Policies 7a-d, 8) call for upgrading existing discharges, phasing out discharges to enclosed water bodies, requiring adequate treatment for new or enlarged discharges to other coastal waters, controlling discharges from new or expanded non-sewered development and restricting expansion of substandard sewage systems.

In addition, the Plan stresses reclamation and reuse of wastewater as a preferred alternative to discharges into coastal waters (Policy 8). The Plan also states the need to offset the continued depletion of coastal zone water supplies (Policy 8) and stresses water conservation by reclaiming wastewater and reducing water use (Policy 23d).

However, the Plan policies are not specific enough to assess how well their purposes can be met, especially with conventional sewage treatment and disposal techniques. In addition, the relationships between sewage generation, water use and water quality are not clearly spelled out for a necessary variety of coastal situations.

This study assesses the technical and economic feasibility of improved wastewater management practices in the coastal zone and suggests policies, programs and procedures to integrate water conservation and water quality management in the coastal zone, for recreational areas and for small subdivisions. These policies are intended to further develop and supplement related policies contained in the Coastal Plan and referred to above.

Chapter III describes available water conservation practices for recreational facilities in Northern California. It reviews the use of water-saving toilets and other appliances. Consideration is given to water savings in landscaping practices, and the use of land disposal of sewage to recharge groundwater tables is discussed briefly.

Chapter IV discusses water conservation in the household sector of coastal development. It discusses residential indoor water use, available water conservation technologies, impact of water conservation on sewage treatment costs, and presents two exemplary public water conservation programs.

Chapter V describes the suitability of on-site wastewater disposal systems along California's coast. It explains basic principles for implementing such systems, problems associated with current regulatory practices and positive directions for public management of coastal wastewater disposal.

Chapter VI reviews waste management facilities for major coastal recreation areas in Northern California. It analyzes Coastal Plan policies relevant to comprehensive wastewater management, discusses the effect of Federal and State water quality control regulations on sewage treatment planning and discusses the role of wastewater reclamation in coastal water quality maintenance. The Chapter presents case studies of wastewater management at Russian Gulch State Beach and Angel Island State Park to illustrate ways in which sewage treatment costs can be cut and water quality improved.

### III. WATER CONSERVATION PRACTICES FOR RECREATIONAL FACILITIES

Coastal Plan Policies (7, 8 and 9) which pertain to pollution caused by sewage are closely related to Policies 23 b-d which call for water conservation, recycling and limitations on water importing. Most sewage in the coastal zone is 99% water and only 1% feces, urine, and dirt. By reducing the amount of water (which simply transports the feces, urine and washing), the costs of treatment and disposal and the chances of pollution can be reduced drastically. In addition, small volumes of sewage are easier to treat, store and recycle. It is only large volumes that require outfall pipes into streams, rivers, lakes and oceans. Finally, reduced water use for toilet flushing and other appliances reduces the need to import water and dam wild rivers. The policies of the Coastal Plan mentioned above can be successfully applied together in the following manner: reduce water use, reduce sewage volumes, reduce the expense and scale of treatment, recycle the treated wastewater, reduce the need for new dams and water imports, and thus protect the natural watersheds of California.

#### A. SEWAGE QUANTITIES

Coastal parks and facilities include boat access sites (public and private moorings and parking spots associated with launching ramps); developed camp-sites with auto access (both tent and trailer); developed camp-sites by walk-in, bicycles or horseback; day use areas such as beaches and picnic grounds, as well as overnight facilities such as recreational campgrounds, hostels, and hotels. The differences in water use and sewage volumes vary tremendously with each location. A wilderness hiker will use stream water and a stick to bury feces. A recreational vehicle campground might have individual water connections, centralized shower rooms and centralized flush toilets. Country clubs and summertime beaches use lots of water for showers. Hardly anyone showers at the beach in winter. Rough estimates of sewage quantities have been made and are listed in Table III-1.

The major problem in planning recreational facilities is peak use overloading. On July 4th or Labor Day, water use and sewage volumes sky-rocket, only to be reduced to a trickle the next day. This problem may be most cheaply handled by a small-scale sewage treatment system with portable toilets kept for rush days, or by a system using holding tanks to retain peak flows. These holding tanks would feed sewage slowly and evenly to the treatment facility during non-peak periods.

Table III-1. Sewage Quantities (Ref. 6)

(Gallons per person per day - unless otherwise noted)

Type of Establishment	Quantity
1. Bathhouses and swimming pools	10
2. Camps:	
Campground with central comfort stations	35
With flush toilets, no showers	25
Day camps (no meals served)	15
Resort camps (night and day) with limited plumbing	50
Luxury camps	100
Cottages and small dwellings with seasonal occupancy	50
3. Dwellings:	
Multiple family dwellings (apartments)	60
Single family dwellings	75
Hotels with private baths (2 persons per room)	60
Laundries, self-service (gallons per wash, i.e., per customer)	50
Motels with bath, toilet, and kitchen wastes (per bed space)	50
Motels (per bed space)	40
Picnic parks (toilet wastes only) (per picnicker)	5
Picnic parks with bathhouses, shower, and flush toilets	10
Restaurants (toilet and kitchen wastes per patron)	10
Travel trailer parks without individual water and sewer hook-ups (per space)	50
Travel trailer parks with individual water and sewer hook-ups (per space)	100



## B. A BRIEF REVIEW OF WATER-SAVING EQUIPMENT

### 1. Toilets

Three kinds of toilets are most commonly available: dry toilets, like pit privies and compost privies that receive, treat and virtually dispose of sewage in one unit; water toilets, like the everyday flush toilet, which receive feces and urine, but for which additional apparatus (pipes, treatment plant, disposal sites) are needed; and chemical toilets, which receive wastes, but always require special trucks to transport wastes to an adequate treatment and disposal site. Chemicals complicate treatment because they contain bio-toxins like zinc and copper. Chemical toilets must be considered with ultimate treatment and disposal costs and location in mind. Production of chemical media, as well as maintenance, uses lots of energy. Relative advantages of different waste treatment systems are shown in Table III-2.

#### a. Dry Toilets

Dry toilets have the great advantage of being self-contained units using no water. They reduce feces by decomposition and treat sewage by soil filtration and adsorption. There are two major kinds of dry toilets: pit privies and compost privies. A well-placed (away from water), well-vented and fly-proofed pit privy cannot pollute or be unsanitary. Pit privies are the most reliable, easily managed and related, cheapest and least polluting of all on-site sewage treatments. When water is scarce or the water system is not pressurized, the pit privy is the only device that makes sense. Two limitations for park use are: high water tables and such a heavy use that new holes must be dug every few weeks. Pit privies have few overloading problems on peak days.

The compost privy's advantages over the pit privy are that it can be placed in almost any habitat (groundwater is unimportant; heat improves the process) and when well managed, it does not need replacing until materials wear out. The disadvantages of compost privies are: (1) overloading: the home-style Clivus Multrum cannot function when daily use exceeds ten persons per day, and the Farallones Institute model (See Figure III-1) overloads when use exceeds about 15 persons each day; (2) management: the compost privy needs much more careful management than the pit privy (usually a weekly basis), and trained personnel must be available; and (3) costs: certain models like the Clivus Multrum are very expensive, compared to a pit privy.

#### b. Water Toilets

The common everyday flush toilet is an extravagant waster of water. Five gallons of perfectly good drinking water are used to flush feces and/or urine. These "wastes" must then be re-separated from the water -- sometimes within a few

Table III-2. Comparison of Alternate  
Waste Disposal Systems

	PIT PRIVY	COMPOST PRIVY	SEPTIC TANK/ DRAINFIELD	AEROBIC UNIT
RELIABILITY	Aerobic & anaerobic composting with some infiltration. Very stable.	Mostly aerobic composting. Stable when proper carbon/nitrogen balance maintained.	Settling, floatation, & anaerobic digestion in tank. Aerobic & anaerobic filtration and digestion in drainfield. Very stable if not overloaded.	Aerobic digestion least stable due to "shock" loading and mechanical complexity.
MAINTENANCE	Very easy. Minimal labor.	Not so easy. Proper amounts of vegetable matter must be added to feces. Manual labor required weekly in some models.	Easy. Labor minimal. Needs checking for pumping about every two to four years. If dual-field, needs yearly manual switching.	Difficult. Many mechanical parts needing specialist labor. Outside energy source can be a problem. Needs cleaning each year.
COSTS	INITIAL: Very inexpensive (\$50). Grey water system may be required.  OPERATION: None MAINTENANCE: None	INITIAL: (a) Farallones model (about \$150). Home made. (b) Clivus (\$500 to \$1,700) (c) Mendocino (\$50 to \$100). Home made.  Grey water system may be required.  OPERATION: None MAINTENANCE: None	INITIAL: Pretty expensive (\$800 to \$2,000) depending on size, contractor, and materials.  Grey water system used to advantage.  OPERATION: Water costs. MAINTENANCE: Pumping every 3 to 10 years (\$40 to \$85).	INITIAL: Very expensive (\$1,600 to \$3,000+). Drainfield not included. Filtration and chlorination not included.  Grey water system used to advantage.  OPERATION: Water costs. Electric.  OPERATION: Water costs. Electricity costs (\$150+ each year). Filtration and chlorination (\$300+ each year).
LIFESPAN	About 10 years for a family of four.	As long as materials last. (a) 20 years (b) 60 years (?) (c) 10 to 15 years	10 to 75 years depending on soils and design.	Less than 10 years before major parts replacement necessary.
POLLUTION & SANITATION	If not near or in water, no pollution or sanitary problems.	No pollution. No sanitation when composting is maintained.	Larger pollution & sanitation problems because of water-feces mix. Soils, groundwater, slope and over-load can be problems. Negligible problems outside property line because of in-soil discharge.	Larger pollution & sanitation problems because of water-feces mix. "Shock" loadings, mechanical breakdown, power black-out & inadequate treatment can be problems. If above-soil discharge, more dangers than in-soil. In-soil has negligible pollution potential outside property line.
RECYCLING	Ultimately by burial & planting a tree. Adds nutrients & humus.	Great fertilizer for gardens, etc.	Sub irrigation in drainfield ultimately fertilizes plants & may re-charge water supplies.	Water is recycled ABOVE SOIL by spray irrigation or in water course by pipe. Nutrients NOT recycled. Used in aerobic unit.
COMMUNITY	Accommodated high densities in cities -- if away from water. Politically, not available for city use. Discouraged even in rural areas.	Can accommodate high densities in cities. Need pick-up of compost. Politically, new to city & rural Health Departments. Rarely accepted with ease.	Low densities only -- need green space for drainfield(s). Rural use. Accepted home-site system but many badly designed.	Low densities with in-soil discharge. High-density with above-soil discharge. Rarely accepted by Health Depts. because of erratic behavior.



seconds of being mixed. In domestic homes, toilet flushing accounts for 40-50% of home water use. In many recreational facilities, the percent is greater.

Note that the quality of water needed to flush toilets is very low. There is no need to take good water, pay for treating it and then use high quality drinking water simply to flush. In sum, one should strive to avoid the standard flush toilet for most coastal uses. There are many ways to reduce the volume needed to flush toilets. In many recreational facilities, men can use urinals with very small flushes. So far, no urinal has been invented for women.

Water can be saved with flush toilets by (1) use of flow-reducing devices in already existing toilets; (2) use of dual-flush toilets in women's facilities; (3) use of shallow-trap toilets in both men's and women's rooms; (4) use of vacuum toilets; and, (5) use of grey-water toilets.

The full five gallons in the toilet tank are not needed to make the bowl clean. In already existing facilities, a public agency could buy hard-fired bricks which would be placed in the tanks (reducing tank volume). Usually, no more than two bricks will fit. Similarly, the float-bob can be bent down. In areas of heavy water use, this results in large yearly water and sewage volume and cost savings. There are also mechanical devices (baffles) that can be put inside toilet tanks to reduce flush volumes or produce a dual-flush (small for urine; large for feces). These devices can save 25 to 50% of the water compared to standard toilets. They can only be inserted into certain toilet designs (Ref. 2).

In all new recreational facilities, the appropriate public agency could minimally require shallow-trap toilets. These have reported savings of 25% or more over the standard 5-gallon flush. They cost slightly more than the standard toilet. (It is not worth replacing already existing toilets because of this expense.)

In larger developments, where many toilets are needed, vacuum toilets become very attractive as water savers and sewage quantity reducers. They are already in use in some California State Parks (e.g., Russian Gulch). They use about 1-1/4 quarts (vs. 5 gallons) per flush. Their main disadvantage is their need for electrical power and some maintenance of the vacuum pump. This is a worthwhile expense when water is costly or scarce or where waste treatment facilities can be significantly reduced in cost by being scaled down.

In coastal areas with multiple utilities, recycling of lightly polluted wastewaters from sinks, showers or laundromats is highly attractive. Essentially the "grey" water (waste-water without feces) is collected in a tank, filtered and chlorinated, then pumped to the toilets. Excess grey water can go to treatment plant or be used for landscape watering (see below) or stored for extra fire protection. The use of grey water to flush toilets has been in operation at Grand Canyon National Park for over 25 years (Ref. 1).

Toilets to Avoid: The Space Age has brought to Earth an incredible variety of appliances and contraptions for receiving human wastes and disappearing them. There are freeze toilets that turn wastes into ice-blocks to be trucked away. There are "Destrollets" that burn everything and pollute the air. Any high-technology, energy-intensive toilet should be avoided, since it is usually incredibly sensitive to over-loading, easily breaks down, needs specialized maintenance, has high energy costs, needs frequent cleaning and still has sludge or other disposal problems. Only the vacuum toilet and the grey water toilet (among those which require pumps) appear to be usable for large visitor populations.

## 2. Other Water-Saving Appliances

Some coastal recreation facilities will have sinks, showers, kitchens and laundromats. The wastewater produced by these facilities is not nearly as hazardous to health as toilet water containing feces. This grey water can be recycled easily for landscape watering, fire protection storage, or even air-conditioning. Separation of grey water from toilet water should always be considered in the planning for a recreational development.

Water use varies with pressure. Approximately 33% more water flows at 80 PSI than at 45 PSI. Much of this water is wasted in showers or washing hands or shaving. Pressure valves are recommended for all large-scale recreational facilities where water pressure exceeds 50 PSI.

In addition, water is wasted while waiting for water to become hot. Showers and sinks that run without being used waste large amounts of water. To reduce this kind of waste, hot water heaters should be placed so that pipe runs are minimal. Pipes should also be insulated. Specifically, each utility has its water-saving gadget:

Sinks: Install hot water only where necessary. Use pressure releasing faucets that slowly turn off after being pushed down.  
Showers: Use flow controls on all showers. This will save water and heating costs. Flow control should be set at 3.5 gpm. Less than this will produce complaints. In Yellowstone National Park, cold showers are free but hot showers must be paid for. In

addition, the hot showers have timing devices. This might be a requirement for some coastal recreational facilities (public or private).

Kitchens (restaurants): Flow control devices on faucets, no garbage grinders and (where applicable) recycling dishwashers. Garbage grinders utilize large quantities of water and place heavy burdens on water-transport sewage systems. Recycling dishwashers use the rinse water of one cycle for the dishes of the next cycle.

Laundromats: Front-load washers use half the water of top loaders.

### C. RE-USE OF "WASTE" WATERS

#### 1. Landscaping/Irrigation

By reducing wastewater flows, most coastal recreational facilities should be able to re-cycle all their water. The most common recyclers are sub-soil drainfields. These drainfields can be used to water trees, fire breaks or lawns. They can be used to re-charge groundwater and re-fill lakes. Every working septic tank/drainfield is, in fact, a small-scale irrigation project. Winneberger's inter-laced drainfield (Ref. 4) is recommended. Small lagoons which both store as well as treat wastewaters are especially useful when soil areas are small or precious. (See Section E below on the Bolinas Sewer Farm). Combined with spray, drip, or flood irrigation, lagoons make for an extremely economical recycling system. Water is commonly sprayed onto golf courses.

Drought-resistant plants can dramatically reduce the need for watering (Ref. 10). Use of drought-resistant plants, with grey-water irrigation, is an attractive planning tool for many parks and small utilities districts (e.g. Bolinas and North Marin). In summer months, grey water which needs minimal treatment can be immediately recycled. The treatment facilities can thus remain small.

#### 2. Environmental Return

Septic tanks are known to be useful as rechargers of ground water in certain parts of the United States. Small-scale sewage plants in the coastal zone can simply use treated sewage water for groundwater recharge, as called for on page 48 of the Coastal Plan. Similarly, groundwater recharge can help reduce salt water intrusion.

Because of heavy human use, many streams and coastal rivers have artificially reduced flows. Treated sewage water can be used to augment stream flow.

### 3. Recreational Uses

San Diego's sewage treatment (the Santee Project) has demonstrated how sewage can be treated by infiltration galleries and fed to lakes for fishing and swimming. Any recreational facility that has a swimming pool nearby or has fishing ponds should consider using recycled water.

### 4. Fire Protection

The great advantage of the integrated pond system (e.g. the Bolinas system) is that the stored water is being treated simultaneously. These purifying ponds can be used as back-up fire protection either by direct use or creating a landscaped pond system.

## D. POLICY GUIDELINES

To encourage these practices, the State should consider implementing the Coastal Plan policies as follows, for coastal zone building permits:

- 1) Require applicant to demonstrate that appliances in his/her plan create the smallest sewage volumes possible. Any use of "luxury" and "water-wasting" appliances like the five-gallon flush toilet must be justified.
- 2) Require State and local Parks and Recreation Departments to utilize toilets and other appliances that create the smallest sewage volumes.
- 3) Prohibit the use of chemical toilets as permanent facilities within the coastal zone.
- 4) Prohibit the use of the standard five-gallon flush toilet in the coastal zone for all developments.
- 5) Prohibit use of electricity-dependent toilets in coastal recreational areas with the exception of grey-water toilets for individual homes and vacuum toilets for larger developments.
- 6) Require applicant to have no direct effluent discharge into natural water bodies except for stream augmentation and marsh restoration.
- 7) Write guidelines for applicants that encourage waterless toilets, on-site sewage treatment and disposal and water-saving appliances.
- 8) Require applicant to estimate landscaping water needs and to integrate on-site disposal with plant varieties.

## E. THE BOLINAS SEWER FARM

In November 1971, the voters of Bolinas voted for a new Board of Directors for the Utilities District. This Board was given a mandate by voters to find a sewage treatment and disposal system that would: (1) allow no pollution of the ocean or lagoon; (2) recycle the water and nutrients from the town's sewage to complete the ancient feces-fertilizer-food-feces cycle; and (3) use as low a scale of technology as possible so that outside sources of energy are minimally relied upon, maintenance and operation costs are kept down, and the small number of mechanical parts reduce replacement costs. The response to this charge was the Bolinas Sewer Farm, completed in the fall of 1975, and described below.

### 1. The Integrated Pond System

While ponding has been practiced in connection with fish culture for hundreds of years, little scientific work was done on ponds as sewage treatment devices until the last two decades. Since 1950, intensive research programs at the University of California and Texas, together with government agency work, have led to an increasing realization of the potential importance of ponds as complete treatment and storage facilities.

Ponds have lower costs than activated sludge or trickling filter systems. Ponds provide multiple benefits not shared by other processes: they provide opportunities for both treatment and storage of liquid wastes within the same system.

In Bolinas, all of the town's sewage produced during the winter months is stored in a series of four ponds. As the sewage sits in the ponds, it is treated (cleaned) by bacteria and algae. The engineering "trick" (different from previous pond designs) was to make the ponds deep like a lake. This meant the ponds stratified into three distinct layers. The bottom layer is anaerobic (without oxygen) and slowly and stably consumes the solids. This layer produces the odors normally associated with sewage. The top layer has sunlight and algae and oxygen. It uses some of the sewage nutrients and transforms the bad odors into odorless gases. The middle layer acts as a buffer between top and bottom and changes in width according to weather.

By creating a series of ponds (not one big pond), the treatment process is greatly aided. Each pond, in series further treats the water until a secondary or even tertiary treated quality water is produced in the fourth pond. This last pond, which further purifies water, is also a storage pond.

The clean water is sprayed out onto town-owned irrigation fields (the Farm) to grow fodder crops for local domestic animals that are then butchered and sold to local stores and residents.



This produces organic beef at reduced prices, as well as saving the District the labor costs of planting and harvesting the grasses. By the end of the dry season, the last three ponds have been emptied in preparation for winter collection and storage. The sewage has been disposed of by evaporation, evapotranspiration and a small amount of percolation.

Pond systems have these additional advantages. They can be used as shellfish and fish propagation ponds. These fish can be consumed after the State is assured that purification is adequate. The ponds are immediately usable as a bird sanctuary and have provided an inland resting and feeding place for shore-birds and dabbling ducks, as well as the white-tailed kite and other hawks. The purchase of the pond/irrigation field took 90 acres of developable land and assured the town of open space. In this way, money was spent to control land use as well as provide good sewage treatment. It was a wiser expenditure than buying fancy, hi-tech equipment that provides no side benefits. The stored water can also be used for emergency fire protection, and there are thoughts of recycling the water into the town laundromat where drinking quality water is not necessary. If the water quality is high enough, there are also plans for a town swimming hole.

The only mechanical equipment in this system is a grinder, a pump to get the sewage from the houses to the ponds, and the irrigation pumps. (In large operations, the sewage can be flood-irrigated rather than sprayed.) There are emergency aerators and chlorinators, in case the system falters.

## 2. Final Note

The Bolinas system had the advantage of being small-scale (treating waste from 200 houses plus a commercial area). However, the integrated pond system is applicable to much larger systems with some variations. The best source on this subject is Reference 3.

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#### IV. WATER CONSERVATION IN THE COASTAL HOUSEHOLD SECTOR\*

##### A. SOURCES OF WATER USE

Residential and commercial water consumption can be generally divided into indoor and outdoor use. Indoor use includes all water uses through indoor plumbing fixtures and water-using appliances. Outdoor use includes lawn and garden irrigation and vehicle washing; public or institutional uses, such as park and golf course irrigation and public fountains; and general municipal uses, such as main flushing and fire fighting.

Residential water use data have been compiled from a number of sources. In a detailed study of many localities throughout the country undertaken for the Federal Housing Administration in 1967 (Reference 1), it was found that indoor water consumption can range from over 90% of total residential consumption in some apartment areas to 40 to 45% in some single-family residential areas in the West. Evaluation of all water use data gathered from the western United States indicates that average household use ranges from approximately 41 to 80 gallons per capita per day (gpcd), and total residential use ranges from 90 to 166 gpcd. Details of residential indoor water use data from several studies are summarized in Table IV-1.

Table IV-1. Residential Indoor Water Use  
(Gallons per capita per day)

Function	References			
	2	4	5	6
Water closet	25	25	34	25
Cooking and drinking	7a	3	4	2
Bathing and shower	20	20	23	19
Lavatory	3	3		
Laundry	9	10	15	14
Dishwashing	-	4		
TOTAL	64	65	76	60

a Includes dishwashing

Although extensive research has been conducted to examine residential water consumption and water conservation methods, the

\*This section is based on the draft of a document, Water Savings, prepared for the Santa Clara Valley Water District by Metcalf & Eddy, Inc., Engineers, February, 1976. References cited are as they appear in the original document. The section was prepared by Patrick Ferrars, Sanitary Engineers, Water Brothers, San Jose.

commercial sector is seldom discussed separately in the literature. This is primarily because the manner in which water is physically used by commercial customers is not significantly different, except that the quantity used in some cases may be greater. Therefore, the water-saving methods discussed in this section apply to both residential and commercial users. The discussion covers indoor and outdoor methods, including specific devices or practices that by their nature reduce water consumption and incentives that encourage general water use reduction, including house-to-house metering of water use and water pricing revisions by the distribution agency.

## B. WATER CONSERVATION TECHNIQUES

Various alternatives for saving water used for residential purposes have been identified and evaluated in terms of their effectiveness, ease of implementation, costs, and potential benefits.

Water consumption in households may be reduced by using various water-saving appliances and plumbing devices and by restrictions on the use of appliances that tend to increase water use. The flow reduction methods, devices, and systems investigated are listed in Table IV-2.

Table IV-2. Indoor Water-Saving Devices and Systems

	<u>Flow-reducing devices</u>
-	Toilet flow reduction
	Single-batch flush valve
	Dual-batch flush valve
	Urinal with batch-flush valve
	Toilet and urinal with batch-flush valves
	Water saver toilet
	Dual-cycle toilet
	Dual-cycle tank inserts
	Reduced-flush devices
	Brick in toilet tank
-	Sink faucet flow reducers
	Faucet aerator
	Flow-limiting valve
	Thermostatic mixing valve
	"Instant" hot water
-	Shower flow reduction
	Flow-limiting valve
	Flow-limiting shower head
	Thermostatic mixing valve
	"Instant" hot water
-	Pressure-reducing valve
	Single home
	Multiple homes

Table IV-2 (contd.)

Flow-increasing devices

Automatic clotheswasher

Automatic dishwasher

Garbage disposal

Flow-reducing systems

Vacuum flush toilets

Single home

Multiple homes

Recirculating mineral oil toilet

Washwater recycle for toilet flushing

In February, 1973, the Washington Suburban Sanitary Commission (WSSC) published the results of a study in which it evaluated the performance of reduced-flush toilet inserts, flow-limiting shower heads, and pressure-reducing valves in terms of their ability to diminish household water consumption (Reference 10). The conclusions indicated that if the appliances are properly installed and adjusted they can aid in accomplishing a significant decrease in household water consumption; if not, difficulties with the household water system and increased water consumption can result. Specific findings were as follows:

1. Reduced-flush toilet inserts can diminish water consumption by 12 to 20%.
2. Flow-limiting shower heads can decrease household water consumption by approximately 12%.
3. Pressure-reducing valves installed in high-pressure areas (70 to 120 psi), which limit household pressure to 50 psi, can lead to water savings of 16 to 24%.

McLaughlin (Reference 13) estimated that wastewater flow can be reduced by as much as 39% by recycling tub, shower, laundry, and lavatory water for use in toilet flushing. This conclusion was based on tests performed on a home recycle system consisting of a 50-gallon storage tank, a 20-square foot swimming pool filter, a water-saving toilet, and a small recirculating pump. The total installed cost of this system in June, 1973, was approximately \$600.

The use of a compost privy with waterless toilets in rural areas has suggested that the individual waste disposal system could also achieve the water-saving purpose. The Clivis Multrum system, a Swedish invention introduced into the United States in 1974, claimed a saving of 40 to 50% in household water use (Reference 14). Although this particular system has been approved in Maine, it is still under investigation by health authorities.

The overall acceptability and ease of installation of each of the devices studied (Reference 6) was evaluated. The devices are ranked in order of overall utility in Table IV-3.

Table IV-3. Water-Saving Devices Ranked in Order of Overall Utility (Reference 6)<sup>a</sup>

Sink faucet aerator  
Single-home pressure-reducing valve  
Flow-limiting shower head  
Multiple-home pressure-reducing valve  
Brick in the toilet tank  
Reduced-flush device  
Water-saver toilet  
Dual-cycle toilet insert  
Flow-limiting valves on shower  
Multiple-home vacuum flush toilet system  
Single-batch flush valve on toilet  
Level control on clotheswasher  
Restrictions on garbage disposal  
Dual-batch flush valves on toilet  
Washwater recycle toilet flushing system  
Toilet plus urinal with batch-flush valves  
Urinal with batch-flush valve  
Single-home vacuum flush toilet system  
Recycling mineral oil toilet system  
Restrictions on automatic dishwasher

<sup>a</sup> Ranked in approximate decreasing order, devices in nearby positions may be considered equal.

#### C. IMPACT OF WATER CONSERVATION ON WASTEWATER TREATMENT COSTS

The reduction of water use will result in a reduction of wastewater flows. How will this change affect sewage treatment costs? Because per capita contributions remain the same, no noticeable change will be observed in the wastewater solids and organic loadings. To the treatment plants, this means a smaller hydraulic loading and similar solids and organic loading on unit processes.

Without changes in solids and organic loading, biological treatment processes will remain the same with similar oxygen requirements. The decrease in flow will result in longer detention time for each unit process, which in nearly all cases will improve the treatment efficiency. With this higher efficiency, less chlorine will be required to achieve the same discharge requirements. Further, pumping costs will also be reduced because less flow must be transported.

Therefore, the impact of the implementation of a water conservation program will not have adverse effects on the wastewater treatment facilities. The advantage of this will be minor savings in power and chlorine costs.

#### D. EXEMPLARY PUBLIC WATER CONSERVATION PROGRAMS

To provide information on implementing the Coastal Plan water conservation policies in coastal areas, a number of water agencies in California that have initiated water conservation programs were investigated. Detailed information on the programs of two agencies is presented here. Included are descriptions of each program's objectives, implementation, costs, and results and effectiveness.

##### 1. East Bay Municipal Utility District, Oakland, California

EBMUD is a public utility agency providing water and sewerage services to the metropolitan area east of San Francisco Bay. Water is sold directly to 301,000 customers (residential, 54%; commercial, 12%; and industrial, 24%). Average daily water consumption for the total system in 1974 was 210 mgd.

###### a. Objectives

In 1972, a water management plan was developed by EBMUD (Reference 15). It was reported that the present water supply will become inadequate between 1982 and 1986 on the basis of the latest projections of water demand and the current estimate of a reliable Mokelumne supply under drought conditions. In addition to finding more water to meet future demands, EBMUD considered water conservation as one way of managing the system to meet future needs by stabilizing the increase in per capita water demand.

###### b. Implementation

To expand EBMUD's water conservation efforts, a water conservation committee was formed. The committee developed an extensive water conservation program with 47 recommendations (Reference 16). The program consists of two phases: (1) a public education program to encourage voluntary conservation of water by homeowners, business and industry, and public authority users; and (2) a regulatory program if experience proves that voluntary measures are inadequate to meet the basic goal of the water conservation program. The recommendations are in three broad categories: (1) those aimed at all or major segments of the district's residents; (2) those aimed at much smaller, specifically identified categories of users; and (3) those which are primarily modifications of EBMUD procedures or regulations.

##### 2. Marin Municipal Water District - Corte Madera, California

The Marin Municipal Water District provides water

directly to approximately 170,000 consumers located in a 140 square mile area of Marin County. Rainfall provides the District's source of water supply and is distributed after treatment for domestic and commercial use, light industry, and some agricultural demands. Annual average water consumption is presently 10 mgd.

a. Objectives

In mid-1973, the District's board of directors determined that a threatened water shortage condition existed. A moratorium was enacted prohibiting an increase in demand on the available supply by limiting additions to the district's distribution system. A bond issue for the Sonoma-Marin Aqueduct, designed to provide the necessary supply to meet the 1980's population projected by the Marin countywide plan, was defeated in November, 1973. In the aftermath, a water supply task force was organized to take another look at the possible alternatives to augment the present supply and to reduce consumption, with the overall objective of developing a water supply program in 3- to 5-year increments so as to keep supply and demand in balance.

b. Implementation

The water conservation program has included three main approaches to date: a public information program, a policy regarding water conservation in conjunction with new development; and making flow reduction devices available to present customers.

The public information/education program has consisted of the following activities:

1. Continued use of billing inserts regarding water conservation practices;
2. Distribution of pamphlets on domestic water-saving methods and on water conservation gardening; and
3. Establishment of a garden at the civic center to display various native low-water-consumption plants.

The District staff, with the assistance of an outside technical advisory committee, issued a proposed water conservation policy in conjunction with new development in late 1974. The policy should provide for the use of low-volume toilets and shower heads, pressure-reducing valves, hot water system insulation or recirculation, and landscaping and irrigation practices. While the present new service moratorium remains in effect, new service will be provided only to developments that make maximum use of the proposed water-saving methods. The District is working with local regulatory agencies toward adoption of code changes requiring water-saving devices and fixtures.



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## V. SUITABILITY OF ON-SITE WASTEWATER DISPOSAL SYSTEMS ALONG CALIFORNIA'S COAST\*

### A. INTRODUCTION TO ON-SITE DISPOSAL

The septic-tank system is the most common kind of on-site wastewater treatment and disposal system, and it consists of a septic tank followed by a subsurface disposal field. The septic tank is one of many kinds of pretreatment devices, but it is the most common because of reliability and low cost. Disposal fields have a variety of names describing different geometries and construction. Essentially, a subsurface disposal field is a covered hole in the ground, where effluent from a pretreatment device is to be absorbed by soils (for simplified terminology, see Ref. 1).

On-site wastewater disposal systems offer flexibility. They permit a planner to locate a residence at any distance from its neighbors. A lonely, single residence can be tucked away among a grove of trees. Sewers, on the other hand, connect neighbors and because of expense of sewers, neighbors are many and separating distances are necessarily short. Communities developed with sewers present at the onset generally have a distinctively regular geometry, and the hillsides of many coastal areas usually require heavy cuts to accommodate homesites in rows.

Suitability of California's coast for on-site disposal systems is the interest at hand, as is reasonable conservation of what aesthetic resources remain.

On-site wastewater disposal along California's coast is governed by codes. Historically, code practices have been aimed toward identifying soils which would tolerate common, simplistic designs, rather than directed toward finding designs suitable for whatever soil situations happened to be found. The situation has been analogous to one's trying to find a river suitable for a certain bridge design, rather than finding a bridge design to suit whatever river needed to be crossed.

#### 1. The Basic Question

The question at hand is, "what service could on-site wastewater disposal systems be in implementation of the December 1975 California Coastal Plan of the California Coastal Zone Conservation Commission?"

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\*John Timothy Winneberger, Ph.D., Consultant, On-Site Wastewater Disposal, Berkeley, California. Dr. Winneberger has eight years of research and ten years of consulting experience in this field.

At the onset, it could be stated that on-site systems could serve essentially anywhere along California's coast: if latest technologies were applied; if control of construction were established; and, if proper maintenance were provided. Those needs are not customarily met in California's on-site disposal practices. Authorities are generally unaware of latest researches, engineers are both untrained and disinterested in on-site systems, and the ubiquitous code approach precludes much rational thought. Consequently, there is no easy way to evaluate soils of California's coast through soils maps (or whatever) for suitability to on-site systems.

On-site disposal systems are a combination of a technical device and a soils system. Historically, the approach has been to investigate the suitability of the soils system for the technical device. Thus, whenever a large land mass such as Coastal California is considered for appropriateness of the combination of technical devices and soils systems, the overwhelming tendency is to investigate the soils systems through use of soils maps, perhaps investigations by untrained engineers, and other such ineffective means. Here, the effort is to ask the reader to realize that the question at hand could competently be answered only by the following sequential procedures.

One: Evaluate Available On-Site Practices

Two: Survey Soil Capabilities

Three: Execute the Derived Plan

It cannot be overemphasized that on-site wastewater disposal is unknown to most technicians dealing with wastewater management and the quality of the recommended effort would have much to do with the quality of the person chosen to do the work. In short, our institutions are far more limiting than soils systems for wastewater disposal.

## B. PUBLIC RESPONSIBILITY FOR SUBSURFACE DISPOSAL

On-site disposal systems and public sewers are simply devices which are frequently confused with private management versus public management. The issue of "septic tanks versus sewers", when a community seems to be poorly served by the former, is not a matter of devices. Rather, the real question is, "when has a community developed such that public management of all wastewater disposal practices is needed?" (2).

### 1. Evolvement of "Septic-Tank" District Concept

On-site systems studied at the University of Wisconsin led researchers to believe that public management of on-site

systems would be a practical step toward improvement of practices (4). A part of project work included thorough legal analyses of approaches (5).

Researches on on-site systems begun in 1958 at the University of California, translations of research results to practical applications since 1965, lectures and preaching since, faith and tolerance of authorities, all led to grass-roots development of public entities in California, charged with responsibility for total management of all wastewaters. The "Total Management Concept" included both on-site systems and public sewers (6). The concept is growing rapidly, offers great savings for the public beleaguered by proposals of sewers, and delights imaginative planners who recognize a heretofore unavailable tool for planning low-density developments with hope for permanence (7).

There now are a variety of districts in California. Some serve new large developments. Others serve an older, existing community. A district also suited to small subdivisions or even lot splits is the county-wide district in Santa Cruz County, California (8).

## 2. Improvement of Practices Through the District Concept

The necessary innovation required is a "Septic Tank Management District". These districts should have the capability of collecting funds. Those funds could be used to introduce advances in on-site wastewater disposal practices to the field. For example, the principle of alternation of fields might be difficult to suddenly impose upon a county's populace, but through district control, its accomplishment would be easy (9).

In addition to solving hard problems, retained consultants could introduce sophisticated devices. For example, inverted sand filters are known to be superior in certain applications (10). Winneberger suggested their use in Stinson Beach (3). Customary practices are greatly lacking sophistication, where individual attention in construction is needed beyond the authority and responsibility of health departments.

Researches at the University of Wisconsin have formalized guidelines for the design and construction of mounds (16). Mounds are above-ground devices which have been constructed in certain areas in the United States where conventional subsurface systems proved to be troublesome. One of California's coastal counties describes what amounts to a pseudo-mound in customary practices. Unfortunately, design of those pseudo-mounds does not conform to latest knowledge and those devices are sometimes troublesome. The district approach could have brought in experts versed in the technology of mounds.

Sometimes the question arises, how big can an on-site disposal system be? There is no limit to size, provided proper expertise is brought to bear on design, construction and maintenance of large systems. Through the district approach, it would be possible for consultants to design on-site systems, utilizing septic tanks and subsurface disposal fields. Such systems could be used to advantage where above-ground devices serving a multiplicity of dwellings would be undesirable. As for size, one on-site system exists in California which on one occasion managed an estimated 200,000 gallons per day.

Still another benefit that could be realized from the district concept is avoidance of unnecessary waste of financial and material resources. Typically, public sewers eventually come, not because on-site systems could not serve indefinitely, but because those systems are neglected to the point of terminal failure. Researchers are beginning to realize that on-site systems can serve indefinitely and that short lifespan phenomena are expressions of poor design and neglect.

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## VI. REVIEW OF WATER QUALITY CONTROL FACILITIES FOR MAJOR COASTAL RECREATION AREAS IN NORTHERN CALIFORNIA\*

### A. ANALYSIS OF COASTAL PLAN POLICIES RELEVANT TO COMPREHENSIVE WATER MANAGEMENT

The Coastal Plan policies to maintain, manage, and restore ocean water quality (pages 31-32) call for upgrading existing discharges to enclosed water bodies, requiring adequate treatment for new or enlarged discharges to other coastal waters, controlling discharges from new or expanded non-sewered development, and restricting expansion of substandard sewage systems (Policy 7 a-e).

In addition, the Plan stresses reclamation and reuse of wastewater as a preferred alternative to discharges into coastal waters (page 32, Policy 8). The Plan also states the need to offset the continued depletion of coastal zone water supplies (page 32, Policy 8) and stresses water conservation by reclaiming the wastewater and reducing water use (Policy 23d, page 50).

However, the Plan policies are not specific enough to assess how well their purposes can be met, especially with conventional sewage treatment and disposal techniques. In addition, the relationships between sewage generation, water use, and water quality are not clearly spelled out for the existing variety of coastal situations.

This section discusses the relative role of innovative versus conventional approaches to wastewater management in existing and proposed coastal recreation areas. Recreational development which will occur between now and 1980 and beyond will be faced with stringent water quality criteria, promulgated by the State of California and the U.S. Environmental Protection Agency.

A great deal of the federal appropriations for construction grants from PL 92-500 will have been expended by this time. Without similar new legislation, state and local agencies may experience the heavy burden of the capital improvement program necessary to meet these water quality requirements.

Due to staffing problems at most Regional Water Quality Control Boards, it has been a general policy to reduce the number of point discharges into receiving waters and consolidate the waste streams at a regional water pollution control facility. This policy results in plans for massive conveyance systems through force mains, adding a large energy cost to a system

\*Patrick T. Ferraro, Sanitary Engineer, is also a member of the Board of Directors of the Santa Clara Valley Water District, San Jose.



which normally operates on gravity to reach the treatment plant. In addition, the concentration of larger volumes of wastewater at one point usually requires higher levels of treatment in order to keep the mass emission rate (MER) of pollutants within the natural assimilative capacity of the receiving water. In general, this basic approach requires higher operation and maintenance costs, which are seldom completely offset by the economy of scale achieved in building one large treatment plant.

The elimination of discharge requirements or goals for many of the coastal regions does not always act to the detriment of cost-effectiveness when comprehensive water planning is considered. Policies No. 8 and 23 both stress reclamation and reuse of adequately treated wastewater for agricultural, industrial, recreational, fish and wildlife, and marsh enhancement uses as a preferred alternative to discharge into coastal waters.

Reclamation systems are the most economical when they can be achieved on a local level, either in an up-sewer "scalping plant" (water is drawn off the sewer system, purified, and the residuals returned to the collector) or when a market is found or developed by proper planning in the vicinity of the local wastewater treatment plant.

Most of the proposed consolidation plans for regional treatment plants give mention to reclamation as a potential option despite the enormous capital investment in conveyance systems. Comments concerning reclamation usually are positive but always state that since time will be required to develop markets and institutional arrangements to deliver the water, it will be necessary to build the costly consolidated disposal plant now while someone else--not usually mentioned--develops the reclamation markets and attempts to get still additional funding into the area to finance the additional capital improvements.

Since most of the water quality control plans in all major river basins are still in the process of being approved, the stated policies on reclamation in the Coastal Plan should be integrated with the basin plans where possible. Most of the systems recommended in the basin plans accept disposal-oriented plans and not reclamation projects, except where they are noted as long-range options.

In the major recreational areas of the coastal zone, the unit cost of sewerage for the park's comfort station and residential units is usually 20 to 40 times the per capita cost of urban areas due to the small daily volumes which are encountered. Conveyance of these flows several miles to a municipal treatment system (in some cases) raises these costs even further and creates a long-term indebtedness for the recreational agency.

Many parks which have already connected to municipal systems will begin to experience a greater economic burden as those municipalities are required to install the higher levels of

treatment required in the time schedules set down in the Federal Water Pollution Control Act (PL 92-500). In the end, these municipal systems may be required to cease discharge completely, either due to state and federal regulations or by virtue of the availability of the effluent stream as the only viable source of supplemental water. Since the goal of "no discharge of pollutants" was set in 1972 with the passage of PL 92-500, it seems better to consider the apparent trend and not spend large sums of money to convey wastewater a long distance for disposal, when the ultimate goal of no discharge could probably be met within or nearby the park right-of-way by means of land disposal using the soil as a "living filter" to purify the wastes.

## B. CASE STUDIES OF TWO PARKS

This section will describe wastewater treatment facilities in two major recreational areas on the Northern California coastline. Both facilities are state parks and were selected because of the information readily available for this report (Reference 1). The choices do not imply that these case studies are the best or worst examples of wastewater management strategies for recreational facilities. Numerous major federal, state, regional, county, and local public and private facilities could also have served as examples to demonstrate the philosophy of comprehensive water management inherent in this report.

The first case study is Russian Gulch State Park, which was chosen as an example of a recently constructed wastewater system in a major recreational facility. The second study is Angel Island State Park, which was chosen for the apparent need for improvement in its wastewater management facilities. Investigations conducted on the new facilities included projected wastewater flows, conveyance system and treatment processes, water conservation measures, and capital and operating costs reduced to a "per visitor" cost. Similar analysis was performed in the second study, with special emphasis given to water conservation possibilities and related cost savings. Also discussed are the alternatives available for improving the wastewater system on Angel Island, concentrating specifically on land disposal versus secondary treatment and Bay discharge.

### 1. Russian Gulch State Park\*

Russian Gulch State Park is located two miles north of the City of Mendocino and 10 miles south of Fort Bragg on Highway 1. The park bounds Russian Gulch Creek Canyon from the Pacific Ocean inland for three miles. Campgrounds are available in the canyon for 30 families, and a group facility accommodates up to 40 people. Appurtenant structures nearby provide piped drinking water, restrooms, hot showers, and laundry tubs. Approximately 10 miles of hiking, biking, and equestrian trails are key elements of the park development. Restrooms are situated along these trails in areas of heaviest travel.

\* Some special local conditions affected waste treatment costs in this case, but the overall analysis and conclusions have general validity.

A newly constructed sewage collection system conveys wastewater out of the park to the Mendocino Community Services District (MCSD) collection system for its water pollution control plant. The park collection system consists of 5700 feet of 4" vitrified clay pipe gravity sewer, 8300 feet of 4" force main, four lift stations, a holding station, a "blower house" which contains air pumps and a chlorine and hydrogen peroxide injection system. The system discharges into an MCSD manhole where it flows in a gravity sewer for approximately 500 feet into a district-owned lift station and is conveyed 2500 feet by force main to the treatment plant.

The MCSD treatment plant, constructed last year, is a standard activated sludge process followed by sand filtration and chlorination with final disposal to the Pacific Ocean through a 600-foot outfall/diffuser pipe. Note that the State Park is thus directly discharging partially treated sewage to the Coastal Zone. The plant has a design capacity of 300,000 gallons per day (0.3 mgd) to accommodate the average dry weather flow. The treatment plant was designed in conjunction with the Community of Mendocino's first collection system by J.M. Montgomery, Consulting Engineers. The acceptance of the park's sewage flows into the municipal system was obviously anticipated throughout the design. Construction cost of the MCSD's collection and treatment system was \$2.2 million.

The average dry weather sewage flow from Russian Gulch State Park is estimated at 25,000 gallons per day (gpd). During wet weather, when park usage is practically nil, the flow rate experienced averages 30,000 gpd and is attributed almost entirely to infiltration. A memo dated December 10, 1975, from John Quisenberry, Associate Civil Engineer, to Noah Tilghman, Office of the State Architect, documents that a daily infiltration of 30,000 gallons is possibly leaking in through a crack in the new holding tank near Lift Station No. 3, adjacent to Russian Gulch Creek. On February 16, 1976, the second day of a local rain storm, the writer observed flow rates out of the tank into the lift station which approximated those documented in the memo described.

The operator of the MCSD treatment plant, Mr. Don Waldman, claims that the District's collection system, being newly constructed, experiences little if any infiltration, indicating that all peak flows above the average dry weather flows are attributed to infiltration from the park's collection system.

The entire collection system has not yet been accepted by the Office of the State Architect (O.S.A., formerly O.A.C., Office of Architecture and Construction), as of mid-February, 1976. Lift Station No. 4, which serves two one-unit comfort stations on the west side of Highway 1, has not been installed due to problems with the pump specifications. This portion of the wastewater system is still connected to a nearby septic tank system which

is not experiencing any difficulty in operation at present, and no history of problems with these units was ascertained. In addition, the probability of a crack in the holding tank at Lift Station No. 3 has caused O.S.A. to withhold payment on that \$9,000 item. Location of the tank so close to the Creek may be a questionable procedure, due to groundwater pressures.

The total construction cost of the park collection system was estimated at \$487,200. Revenues available for construction of the project totaled \$507,201. In addition to these costs, the park has reserved 8% of MCSD treatment plant's capacity and a portion of a gravity sewer, pump station, and force main beyond the terminus of the park's conveyance system. The State's participation in the District's facilities represents an additional capital investment of \$80,000.

Operation and maintenance (O & M) costs of the park collection system include power, chemicals, routine check of lift stations, and report preparation. Maintenance of the lift stations has been performed thus far by the staff of MCSD at a rate of \$3740/quarter (three months). O & M costs of the District collection system and treatment plant are also apportioned to the State. A complete cost summary is provided in Table VI-1.

Using the average annual visitor figure for the park, the total cost of wastewater management for Russian Gulch State Park is \$1.10 per visitor.\* This is an extremely high figure, and it is certainly possible that an on-site land disposal system would have resulted in a significant cost savings to the State.

Water conservation systems in use in the park at present consist of low-volume toilets in the comfort station midway along the line leading to Lift Station No. 3. Six units requiring a two-quart flush as opposed to a normal five-gallon flush unit represent an estimated saving of 540 gallons per day, assuming a usage of 20 per day/unit. This is only about 5% of the total water use, indicating large potential savings in water use and sewage volumes still exist.

## 2. Angel Island State Park\*\*

Angel Island State Park is located off the tip of Tiburon, overlooking the Golden Gate Bridge. The island, site of various military installations since the Civil War, has been a

\*Wastewater management costs for similar systems proposed at Angel Island State Park ranged from \$.15-\$.50 per visitor.

\*\*Based on a field trip February 6, 1976, with representatives of the Office of the State Architect and the Department of Parks and Recreation.

Table VI-1. Cost Summary, Russian Gulch State Park

Capital Costs:

Park Collection & Transmission System	\$487,200.
Mendocino City Community Services District Treatment Plan and Collection System--Park-agreed share	<u>80,000.</u>
Total	567,200.

1. Debt Retirement:

20 yrs. @ 8% (CRF=.10185) 57,800/yr.

2. Operation & Maintenance Costs:

a. Park Collection System		
Power	100.	
Chemicals/Testing	1,500.	
Labor @\$42/day	15,300.	
Equip. replacement (5% of \$487,200)	<u>24,400.</u>	
Subtotal		41,300.
b. District Treatment Plant & Collection System		
Power	10,200.	
Chemicals	2,700.	
Labor	13,600.	
Equip. replacement (5% of \$1.6 million)	<u>80,000.</u>	
Subtotal	106,500	
8.3% of Subtotal		8,840.
Total O & M		<u>50,140.</u>

3. Total Annual Cost (1+2) \$107,940.

(4.861 Million Gallons; Cost/1000 Gallons= \$22.21)

state park since 1960. Its major recreational use is by boaters, picnickers, hikers, and bicyclists. Visitors are transported to the island via ferry or private boat, landing at the only presently developed dock and moorings at Ayala Cove.

Approximately 90% of the 150,000 to 175,000 visitors per year to the island never venture beyond the area of Ayala Cove. Two comfort stations are provided in this area to accommodate the peak capacity of the park, rated at 3300 persons per day.

The existing wastewater management system at Angel Island includes a 5000 and 10,000 gallon septic tank and 10,000 gallon holding tank in the Ayala Cove area. The septic tank supernatant overflows into the holding tank and is chlorinated prior to discharge to the San Francisco Bay through an outfall extending two feet below mean lower low water about five feet from Point Ione.

About 20 persons reside in the buildings of the North and East Garrisons. Wastewater from three residents at Quarry Point is sewered and discharged through the seawall at the south side of the point. Two residences plus the Fire House are also sewered and discharged into the Bay at Simpton Point.

Six non-water carriage comfort stations (pit toilets) are presently in use: two at the picnic grounds near the old hospital, two at the West Garrison; and two near the summit of the island.

Park usage varies from 0 to 27,700 people per month, with peak days of up to 3300 people. Taking into consideration the 30 residents and employees, the estimated sewage flow, at the present level of park development, is 27,000 gallons on the maximum day. Since 90% of the usage is in the Ayala Cove area, it is estimated that 24,000 gpd would originate from the facilities around the Cove.

Projections of expanded future park development would increase the maximum daily wastewater volume to 50,000 gpd, if no water conservation measures and fixtures are developed in the island's water and sanitation systems. If future development allowed higher use of the island at the East and North Garrisons, half of the total usage would be generated there and the Ayala Cove area flows would be increased to a maximum of 25,000 gpd.

The wastewater management system at Angel Island has been under study for several years (Reference 2). On July 10, 1973, the Department of Parks and Recreation filed with the San Francisco Bay Regional Water Quality Control Board for a NPDES (National Pollution Discharge Elimination System) permit, but has only received a "Draft of a Proposed Tentative Order" incorporating the objectives and effluent limitations of the Tentative Water Quality Control Plan for the San Francisco Bay Basin. Basically, these objectives would require conventional secondary treatment or better if continued discharge is desired. The stated goals of PL 92-500,

the 1972 amendments to the Water Pollution Control Act, indicate that increasingly higher treatment requirements will become mandatory in the next 10 years until the 1985 goal of "no discharge of pollutants" is enforced.

Studies by Kennedy Engineers, Inc., Consulting Engineers (References 3 and 4), and Bio-Kinetics, Inc., have recommended several alternative treatment systems, all essentially designed to process the wastewater to today's anticipated requirements for discharge. The alternatives generally involve construction of 3000 to 9500 feet of gravity and pressure sewers and one or two secondary treatment plants sized at 50,000 gpd or two at 25,000 gpd. The alternatives range in capital cost from \$135,865 to \$718,455. Annual costs range from \$39,225 to \$74,565 (about \$.25-\$.50 per visitor). The highest annual cost corresponds to the lowest capital cost, based on a proposal of Bio-Kinetics, Inc., to provide the treatment unit.

Neither the consultants nor the Parks and Recreation Department gave serious consideration to land treatment and disposal of the wastewater effluent. On February 6, 1976, a field investigation was conducted by the State Architect, with members of his staff, several consultants including the author of this report, and several staff members of the State Department of Parks and Recreation. During this tour, it was determined that a combination of water conservation fixtures and land disposal of liquid wastes would be a viable and preferred alternative to those previously developed for discharge to the San Francisco Bay. An abandoned Nike Missile site near the East Garrison was selected as a suitable site for residual solids disposal, with potential for acceptance of raw sewage flows from existing and future facilities in the areas outside Ayala Cove. Detailed studies are currently underway to assess the technical feasibility of the proposed land disposal system; it certainly appears a promising alternative.

The land disposal system would be situated in the 32-acre watershed above the wastewater reservoir of the abandoned quarry. A 15-foot concrete-core dam will serve to capture any runoff from the irrigated area and allow it to be resprayed. This system would require 2000 feet of 4" force main, two pump stations, and the sprinkler irrigation system. Estimated capital and operating costs are listed in Table VI-2. These costs are approximately \$.15 per visitor, indicating a significant cost savings for the land disposal system, in addition to a reduction of the sewage outflow to the Bay.

With the possibility of development of docking facilities on the east side of the island, the installation of water conservation fixtures would save both capital and O & M costs for expansion of the water system and wastewater treatment facilities. The land disposal site would have capacity to treat the additional supernatant from the east-side treatment plant located in the abandoned

Nike Missile site. Connection of this site to the land disposal system would require 300 feet of 4" force main and a pump station, with an estimated 1975 cost of \$50,000. This would be a fixed cost and would not be reduced with the installation of water conservation fixtures.

Table VI-2. Estimated Costs of Land Disposal System

Capital Costs:		
2000 feet 4" forcemain @\$10/foot		\$20,000
Ayala Cove Lift Station & Chlorination		56,000
Sprinkler system for 32 acres @ \$500/ac		16,000
Recirculation system from reservoir		5,000
Site work		4,000
Electrical work		3,000
		<u>\$104,000</u>
Contingencies (10%)		10,400
	Total Capital	<u>\$114,400</u>
Debt Retirement 20 yrs @8% (CRF .10185)		11,650
Operating Costs:		
Chemicals		1,800
Power		200
Maintenance		6,000
Equipment replacement (5% cap. cost/yr)		5,700
Sludge hauling (9 truck loads @ \$100)		900
	Total O & M	<u>\$14,600</u>
	Total Annual Cost	<u>\$26,250</u>
(2.133 Million gallons; Cost/1000 Gallons=\$12.31)		

Comfort Station facilities in Ayala Cove had urinals and toilets, flushed by high-pressure valves, which typically use 2.5-3.0 gallons per flush, when in proper adjustment. Clearly, a lot of wastewater is being generated beyond need.

Low-flush (two-quart) water closets represent an 80%-90% reduction in water usage over standard toilet units. Since 60% of the present water usage is by park visitors using comfort stations, with a potential for this figure to increase to 75% with new docking on the east side of the island, low flush toilets



could reduce water use and wastewater volumes by up to 2.27 million gallons per year. Unit volume costs for treatment and disposal would rise as a result, but overall costs of power and chemicals would be reduced, representing an annual savings of \$1080 per year at the existing level of development, and \$2340 per year with development of the east side of the island.

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2. Personal Communication, Michael Brown, Department of Parks & Recreation.
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4. Brown, Michael, "Supplement to Kennedy Engineers' Report," California Department of Parks & Recreation, June 1975, Sacramento.

VII. PERSONS CONTACTED (Section 2)

A. State of California, Sacramento

1. Office of the Legislative Analyst
  - Donald Benedict, Principal Program Analyst
  - Wayne Keithley, Program Analyst
2. Office of the State Architect
  - Sim van der Ryn, State Architect
  - Irving Schultz, Senior Civil Engineer
3. Department of Parks and Recreation
  - Jack Hesemeyer, Area Manager, Marin Area
  - James White, Associate Civil Engineer
  - Michael Brown, Civil Engineering Associate
  - Len Algeri, Mendocino Area Parks Maintenance Superintendent
4. State Water Resources Control Board, Sacramento
  - Gil Wheeler

B. Local Government

1. Mendocino County Health Department, Ukiah
  - David Long, Director
2. Mendocino Community Services District, Mendocino
  - Don Waldon, Treatment Plant Operator
3. Sonoma County Health Department
  - R.O. Logsdon
4. Marin County Health Department
  - James Jurik
5. San Mateo County Health Department
  - Gareth Ott
6. Santa Cruz County Health Department
  - L. Raynor Talley, Director of Environmental Health

Supporting Document C

THE COSTS OF LOCAL IMPLEMENTATION  
OF THE COASTAL PLAN

Prepared by the Office of Planning and Research  
At the Request of the State Legislative Analyst's  
Office in Response to SR 41/1975

February 18, 1976

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## PREFACE

This report was prepared by the Office of Planning and Research for the Legislative Analyst's Office as part of a study, required by Senate Resolution 41, of the costs of implementing the proposed California Coastal Plan.

The purpose of this report is to analyze the implementation program required of local governments by the Coastal Plan and to determine the costs associated with local governments carrying out the prescribed implementation program. This report covers the planning and regulatory activities of local general purpose governments (cities and counties) directly affected by the Coastal Plan.

In preparing this report, the Office of Planning and Research consulted with the staffs of the State Coastal Commission, the Regional Coastal Commissions, the Sea Grant Program at the University of California, Berkeley, and seventeen local governments directly affected by the Coastal Plan.

## INTRODUCTION AND SUMMARY

To accomplish the purpose of this report, three specific efforts were undertaken. First, it was necessary to identify the aspects of local government planning and regulatory activity affected by each of the policies in the Coastal Plan. The results of this analysis are included as Appendix A. Secondly, the precise tasks required of local governments--in preparing or revising plans, ordinances, zoning, codes and programs for certification by the Coastal Commission--were identified. This analysis is included as Appendix B. Finally, the direct costs to local governments of implementing the Coastal Plan were identified. This consisted of a survey of five coastal counties and twelve coastal cities, the results of which are included as Appendix C.

The results of this research are summarized below.

1. Several factors minimize the number of tasks to be performed by local government due to Coastal Plan requirements:
  - a. Existing federal, State or regional agency responsibilities.
  - b. Existing local planning requirements of other authority.
  - c. Plans, information and assistance to be provided by State agencies as part of Coastal Plan implementation.
  - d. Existing information and technical assistance.
2. The exact scope of each jurisdiction's implementation program would be determined by several factors unique to each jurisdiction:

- a. Local conditions (the number of coastal issues to be addressed).
  - b. Relationship of the jurisdiction to the Coastal Resource Management area.
  - c. Consistency of existing local plans and programs with the Coastal Plan.
  - d. Number and type of existing special local government functions.
3. Generalizations about the costs to local government of preparing plans and programs for certification are difficult to make. However, the survey of local governments did indicate that:
  - a. The total cost for all 75 affected jurisdictions to develop certifiable plans and programs may well exceed the \$2 million to \$2.5 million estimate in the Coastal Plan.
  - b. There appears to be a minimum cost to each jurisdiction in the range of \$10,000 to \$20,000.
  - c. The upper limit cost to any jurisdiction, except in rare cases, appears to be about \$100,000.
  - d. Jurisdictions which have worked closely with the Coastal Commission in recent years will not be faced with significant costs in preparing for certification.
  - e. More detailed guidelines for implementation and an examination of local plans and programs are required for an accurate estimate of costs.
4. Following certification, implementation of the Coastal Plan may involve additional responsibilities on the part of local governments. These increased responsibilities might result from:

- a. An increase in the number of permits which may be required to be issued by local government.
  - b. More complex or involved analysis of project proposals.
  - c. Amendment of local plans following Coastal Plan amendment.
  - d. Litigation as a result of decisions made by local governments pursuant to certified plans or policies.
  - e. Appeals of local decisions to the State Coastal Agency.
5. The cost associated with 4a and 4b could be largely covered by applicant fees, and costs associated with 4c, 4d and 4e cannot be estimated at this time.
6. The survey indicated that roughly half of the jurisdictions felt the costs to local government of implementing the Coastal Plan following certification would be significant while the other half felt they would be minor.



## THE COSTS OF LOCAL IMPLEMENTATION OF THE COASTAL PLAN

Primary responsibility for carrying out the Coastal Plan is charged to local government. The basic rationale and the general procedure for local implementation is presented most concisely in Part I of the Plan as follows:

Because city and county government is accessible and accountable to its constituents, because statewide coastal concerns should be reflected in local planning and regulation, and because Plan implementation should be streamlined to reduce costs and delays, primary responsibilities for carrying out the Coastal Plan should rest with local governments. Within three years of the effective date of State legislation to carry out the Plan, local governments along the coast should be required to bring their general plans into conformity with the Coastal Plan. Local governments would submit their plans to the Regional and State Coastal Commissions for certification as to conformity with the Coastal Plan. After all the local plans in a region had been certified, the Regional Commission would go out of existence. Local governments would then control coastal conservation and development, subject to a system of limited appeals to the State Commission to insure that approved local plans and thus the Coastal Plan were being followed in day-to-day decisions.

Thus, implementation of the Coastal Plan by local government consists of two aspects or phases. During the first phase, commencing immediately following the effective date of the legislation carrying out the Coastal Plan and terminating in certification of the local implementation program by the Regional and State Coastal Commissions, local government would modify its plans, ordinances, zoning, codes and programs in preparation for certification. In the second phase, commencing with certification, local government would administer the certified plans, ordinances, zoning, codes and programs through normal local governmental procedures.

### Implementation - First Phase

During the first phase of implementation, local governments along the coast would be required to bring their general plan and other long-range development plans for that portion of their jurisdiction lying within the Coastal Resource Management Area into conformity with the Coastal Plan. Local governments would also prepare ordinances and zoning changes necessary to implement the Plan, including capital improvement programs, specific programs for acquisition of open space and recreational facilities, appearance and design guidelines, and restoration programs for natural or manmade resources. Once revised, these plans, ordinances, codes and programs would be presented to the Coastal Commission for certification. This first phase of implementation is to be accomplished within three years of the effective date of legislation carrying out the Coastal Plan.

### Existing Local Government Planning Framework

California State law requires each city and county to establish a planning agency and planning process to guide growth and change in accordance with a framework of officially adopted goals and policies. It is primarily through this planning framework that local governments will implement the Coastal Plan.

The primary policy statement for local planning is the comprehensive, long-range general plan required by Section 65302 of the Government Code. Nine elements are required in the general plan: land use, circulation,

housing, conservation, open space, seismic safety, noise, scenic highways and safety. While many cities and counties are still preparing the four latter elements, all cities and counties are required to have adopted all nine elements by December 31, 1976. In addition to the nine mandated elements, provision is made in Section 65303 of the Government Code for inclusion in the general plan of optional elements, such as an historical preservation element, a public services element and a recreation element.

To carry out the general plan and regulate land use, the State planning and zoning law enables cities and counties to establish zoning procedures. By requirement of Government Code Section 65860, zoning must be consistent with the general plan. Under the local zoning ordinance, conditional use permits are granted for development and uses consistent with requirements and standards of the specific zones.

Government Code Section 66410 requires cities and counties to adopt a subdivision ordinance, consistent with the State Subdivision Map Act, for the regulation of land divisions by subdivision map or parcel map (in the case of four or fewer parcels).

As a guide for the expenditure of public funds for capital improvements, Government Code Sections 65401 and 65402 require that cities and counties prepare annual capital improvement programs which are consistent with the adopted general plan. These capital improvement programs specify the nature and location of capital improvements and priorities for funding.

### Tasks Required by the Coastal Plan

The actual content of the local implementation program consists of the specific requirements for local government contained in the Coastal Plan Policies (Part II) and the maps and notes included within Part IV of the Coastal Plan. In Part III of the Plan an effort has been made to outline the content of the local implementation program. This local implementation program outline includes sixteen components:

- A. Community Development
- B. Shoreline Recreation
- C. Recreational Support
- D. Streams, Estuaries and Wetlands
- E. Agricultural Resources
- F. Forestry Resources
- G. Scenic Resources
- H. Man-Made Resources
- I. Wildlife and Plant Communities
- J. Hazards
- K. Low- and Moderate-Income Housing
- L. Water and/or Wastewater Service System
- M. Energy Facilities and Conservation
- N. Transportation System
- O. Minerals and Soils
- P. National Interest Facilities

It should be noted that there is much overlapping among these components and that local implementation would in reality be carried out as part of the jurisdiction's normal planning process. In general, this planning process would involve a number of steps or phases including:

- 1) Comparing the Coastal Plan with the local general plan, ordinances, zoning, codes and programs;
- 2) Identifying conflicts and inconsistencies;
- 3) Undertaking basic research into the physical environment, the physical infrastructure and land use, preparatory to a general plan revision;

- 4) Drafting proposed general plan revisions;
- 5) Holding public hearings on the proposed general plan revisions;
- 6) Drafting or revising ordinances, zoning, codes and programs consistent with the revised general plan;
- 7) Conducting public hearings on the proposed or revised ordinances, zoning, codes and programs;
- 8) Presenting the proposed, revised general plan, ordinances, zoning, codes and programs to the Coastal Commission for certification.

Taken at face value the local implementation program as outlined in Part III of the Coastal Plan and as more fully detailed in the Plan policies, appears to require an enormous planning effort by local government. However, much of what is mandated on local government is already required by existing State and federal law. In addition, much of the information necessary to carrying out the first phase of implementation is available or will be provided by State agencies as part of State implementation of the Coastal Plan. The following is a summary of factors discussed in Appendix B, which circumscribe the work program to be carried out by local government as part of the first phase of implementation:

1. Existing federal, State or regional authority:

The local implementation program prescribes local programs for the control of a number of activities over which federal, State and regional agencies already have regulatory authority. Where this is the case, local government would only be responsible for developing programs to supplement the existing federal,

State and regional programs. For example, much of what is required by the Forestry Resources Component is already being achieved through Division of Forestry regulation of timber harvesting under the Forest Practice Act. The local implementation program in this area would only need to address those aspects required by the Coastal Plan but not covered by the Forest Practice Act.

In addition to existing authority, the Coastal Plan calls for legislation to expand the activities and/or regulatory authority of several State agencies, which would serve to further limit the amount of local responsibility for certain aspects of implementation.

2. Local Planning required by other authority:

Many federal and State requirements already exist which mandate that local government carry out planning and regulation in areas addressed by the local implementation program. For example, the State planning and zoning law already requires that local general plans include many considerations mentioned in the Coastal Plan as part of the local implementation program. It is important to note in this regard that for the first time local general plans will, through the certification process, be reviewed by a State agency for adequacy. Heretofore, only compliance with the requirement for adoption of certain general plan elements was monitored by the State. Other examples of existing

requirements for local planning include the National Flood Insurance Program, the Colby-Alquist Flood Plain Act, the Alquist-Priolo Special (Seismic) Studies Zones Act, and the Surface Mining and Reclamation Act.

3. Plans, information and assistance to be provided by State agencies as part of Coastal Plan implementation:

Local government implementation of some requirements of the Coastal Plan is dependent on plans, information or assistance to be provided by State agencies should the Coastal Plan policies regarding these agencies be implemented and adequate funds be made available. These plans, information and assistance can be grouped into three categories:

- a. Areawide plans in the form of comprehensive watershed management plans, covering the entire coastal area, and subregional plans, "where cumulative impacts of development has the potential for adversely affecting resources or coastal access", are called for in the Coastal Plan. Specific responsibility for the preparation of these plans is not assigned in the Coastal Plan, but in many cases lead responsibility for preparing the plans would reside with a State agency.
- b. Model ordinances, standards and criteria are required to be prepared by State agencies for local government. These include a model ordinance for control of runoff,

erosion and silt; criteria for determining archaeological significance; and design standards and safety criteria for coastal trails.

- c. Other kinds of information are to be provided to local government by State agencies, including the assignment of uses for remaining road capacities; designation of State coastal trail routes; wetlands restoration priority list; survey of archaeological and paleontological sites; and identification of important or significant coastal "natural living communities".

4. Existing information and technical assistance:

A great deal of the information needed for the implementation program is already available in the form of maps and reports, prepared through the earlier efforts of local government, or by State and federal agencies and universities as part of ongoing programs, or by private organizations such as the California Native Plant Society and the California Roadside Council. Some of these agencies and organizations can be called upon during the first phase of implementation to assist in the preparation of plans, ordinances, codes and programs.

Beyond those factors which serve to circumscribe the amount of work required of local government in general are a number of other factors unique to each jurisdiction which will determine the exact scope of the work program each jurisdiction will need to undertake to achieve certification by the Coastal Commission. These include:



1. Local Conditions:

The most obvious factor determining the scope of a local government's work program is the number of issues or concerns addressed by the Coastal Plan which are relevant to the jurisdiction.

Forestry resources, for example, is an important consideration for jurisdictions with forests. In the same way, agricultural resources, flood and seismic hazards, and wetlands are unevenly distributed along the coast and are therefore significant concerns to some jurisdictions while not to others.

The type and scale of local development within a jurisdiction would also affect the scope of the work program. Some jurisdictions have recreational development along the coastline while others do not. Some jurisdictions are substantially built out to planned or zoned potential while others contain large areas of underdeveloped land. Some jurisdictions are basically rural in character while others are densely populated.

The point here is that the scope of each jurisdiction's implementation program will be determined by the number of concerns relevant to the jurisdiction and the degree to which these concerns are significant.

2. Relationship of Jurisdiction to the Coast Resource Management Area:

The Coastal Resource Management Area (CRMA) is the area within which local plans and programs would be brought into conformity with the Coastal Plan. It extends from the mean high tide line inland to include: (1) all significant coastal

resources (including natural, man-made and recreational resources) and (2) areas where development could directly or cumulatively affect public access to the coastal recreation areas. The width of the Coastal Resource Management Area varies along the coast from less than a mile to as much as ten miles. Some coastal cities lie entirely within the CRMA, while many others lie only partly within the CRMA. All the affected counties lie only partly within the CRMA. Since it is only within the CRMA that local jurisdictions have to prepare implementation programs, the amount of the jurisdiction lying within the CRMA would have some bearing on the magnitude of the program a local government would have to carry out.

3. Consistency of Existing Local Plans and Programs With the Coastal Plan:

The greater the consistency of existing plans and programs, the less effort will be required of the jurisdiction. A number of cities and counties in the coastal area have recently been or still are in the process of revising their general plans to meet changing local conditions and needs. Some of these jurisdictions have worked closely with the Regional Coastal Commissions to assure that revised plans reflect the concerns of the Coastal Commission; where this is the case, local plans are likely to be generally consistent with the Coastal Plan. The kinds of programs already instituted by local government will

also affect the amount of work to be done. For example, many jurisdictions already have a design review process which satisfies the Coastal Plan requirements, while other jurisdictions either have no design review process or have a design review process which would have to be modified prior to certification.

4. Number and Type of Special Local Government Functions:

Many of the Coastal Plan policies relate specifically to special local government functions, including the provision of water, sewerage, transit, power, and the management of airport and harbor facilities. In some areas these functions are the responsibility of special districts which have their own revenue sources. To the extent that any city or county has responsibility for any of these special functions, there will be special planning efforts to be undertaken by the jurisdiction to meet the requirements of the Coastal Plan.

The Costs of Preparing for Certification

In trying to determine the local costs of the first phase of implementation, OPR surveyed five counties and twelve cities (see Appendix C). Each jurisdiction, after a discussion of the requirements of the local implementation program, was asked to estimate the total cost to the jurisdiction of revising plans, ordinances, zoning, codes and programs for certification. This cost estimate was to include staff time, consultant fees, materials and special meetings of the planning commission and legis-

lative body directly related to implementation of the Coastal Plan. The cost estimates varied widely. Some of the estimates were based on a thorough understanding of the Coastal Plan and previous discussions with the Regional Coastal Commission staffs, while other estimates were based only on a limited understanding of what the Plan requires and how the particular jurisdiction would be affected. Two jurisdictions surveyed did not attempt estimates. In general, jurisdictions had difficulty making these estimates due to uncertainty about how specific Coastal Plan policies will be interpreted, who will have responsibility for various aspects of planning and regulation, how much assistance will be provided by State agencies and the Coastal Commission staff, what standards might be established for the adequacy of local implementation programs, and how CEQA will apply to the various decisions to be made by the jurisdiction in connection with the local implementation program.

Because of the wide divergence in the estimates, generalizations about costs are difficult to make. However, several observations based on the survey can be made:

- There appears to be a minimum cost to each jurisdiction for the first phase of implementation in the range of \$10,000 to \$20,000. Included in this \$10,000 to \$20,000 amount, would be the expenses in staff time or consultant fees of reviewing all local plans, ordinances, codes and programs for consistency with the Coastal Plan, making whatever changes, however minor, to achieve consistency, and preparing the implementation program package for review and certification by the Regional and State Coastal Commissions.

- A general upper limit cost to any jurisdiction to carry out the first phase of implementation appears to be about \$100,000. Only in the event that a jurisdiction's existing plans were substantially inconsistent with the Coastal Plan, and/or where a jurisdiction has responsibility for several special functions, would the cost likely exceed \$100,000.
- Jurisdictions which have worked closely with the Coastal Commission during the last several years in revising local plans will not be faced with significant costs in the first phase of implementation.
- The average of the cost estimates of those jurisdictions surveyed for the first phase of implementation is about \$45,000. If this simple average is multiplied by the 75 jurisdictions the Coastal Commission has indicated will be directly affected, the total cost would be approximately \$3.4 million. However, the Coastal Commission estimated that, based on preliminary discussions with planning officials in coastal cities and counties, total cost for the first phase of implementation will be \$2 million to \$2.5 million, or about \$700,000 to \$800,000 per year.
- The costs of the first phase of implementation cannot be accurately estimated by jurisdictions until more implementation guidelines are developed and local general plans, ordinances, zoning, codes and programs are examined for consistency with the Coastal Plan.

### Implementation - Second Phase

Following certification of the local implementation program, the "permit function" now performed by the Regional Commission would be transferred to local government and implementation of the Coastal Plan carried out through local governmental procedures.

### Local Government Planning and Regulatory Procedures

Local governments have a set of procedures based on State law through which they regulate land use. The first of these is the use permit procedure. Under the State planning and zoning law, cities and counties can require conditional use permits for the use or development of property consistent with the provisions of the zoning ordinance. Conditional use permits are discretionary permits in that they are issued pursuant to a judgement or decision by a local official, a designated body such as the planning commission or the legislative body (city council or board of supervisors).

The State Subdivision Map Act requires that local governments establish by ordinance subdivision procedures to regulate the division of land by subdivision map or parcel map (in the case of four or fewer parcels). Approval of a subdivision or parcel map is also a discretionary act requiring a decision by the legislative body.

Discretionary decisions are subject to the provisions of the California Environmental Quality Act and the State EIR Guidelines. All project applications, except those specifically exempted by the State EIR

Guidelines, and all public project proposals acted upon by the legislative body are required to be reviewed for possible adverse environmental effects. Where there is the possibility of a significant adverse effect, an environmental impact report is required to be prepared. The environmental impact report is only an informational document and as such conveys no regulatory authority.

In addition to the discretionary permits, cities and counties issue several types of non-discretionary permits, such as building permits which only require that the applicant demonstrate compliance with relevant standards.

#### Tasks Required by the Coastal Plan

The additional responsibilities to be assumed by local government in the second phase of implementation will vary from jurisdiction to jurisdiction. Additional responsibilities required as part of the "permit function" following certification might result either from an expansion of discretionary control over private development or from an increase in the number of considerations required by the Coastal Plan in the local project proposal review process.

Some jurisdictions exercise broad discretionary control over private development through use permit procedures, while other jurisdictions exercise limited discretionary control. In the latter case many projects are subject only to building permits. As a result of the certi-

fication process, local governments may have to expand their discretionary control through the requirement of more conditional use permits as a means of more effectively controlling development. However, it is not clear that this kind of broadened discretionary control will be needed to effectively carry out the Coastal Plan. In the event that more conditional use permits are required as part of a jurisdictions implementation program, the current planning (project proposal review) workload would be increased.

The Coastal Plan sets forth criteria for review and approval of certain kinds of project proposals which may require a more involved analysis of project proposals by local staff. Some jurisdictions may not presently have the staff or staff expertise to carry out such analysis and would need to hire additional staff or contract with a consultant to handle the additional considerations.

The Coastal Plan also requires what may be new procedures for a jurisdiction. Policy 46, as an example, specifically requires the establishment of "local design procedures". Design review procedures at the local level are not presently required by State law, and more than half of the jurisdictions surveyed indicated they do not have design review procedures or have procedures which would not meet the requirements of the Coastal Plan. Whether design review is carried out by a special committee, by the planning commission, or by staff, the establishment of design review procedures consistent with the Coastal Plan requirements will require additional work of local governments presently without such procedures.



Beside project proposal review, the "permit function" entails inspection and enforcement to ensure compliance with the conditions of approval. Because there may be additional use permits or additional conditions of project approval following certification, there may be increased responsibility for local government in the area of inspection and enforcement.

In terms of sheer volume, the increase in the current planning work associated with the permit function would depend on the degree to which existing local project proposal review procedures were adequate to meet the requirements of the Coastal Plan and the amount of development activity within the jurisdiction.

The "permit function", however, is not the only activity which may affect the local government workload as part of the second phase of implementation. Several additional factors have been identified as potentially requiring increased local government activity following certification. First, the Coastal Plan may be amended from time to time following adoption, and this may necessitate a further revision of local plans, ordinances, zoning, codes and programs. Secondly, litigation which may be time-consuming and costly, might result from decisions made by local government in accordance with plans, ordinances or zoning adopted pursuant to the Coastal Plan. And finally, if the basis of appeal of local decisions to the State Coastal Agency is not restricted, jurisdictions may become involved in preparing for time-consuming appeals hearings before the State Coastal Agency.

### The Costs of Carrying Out the Plan Following Certification

All of the factors mentioned above could mean increased responsibility and increased costs to local government following certification. However, since the last three factors mentioned are highly speculative in nature, comments in this section relate only to the permit function.

OPR as part of the survey of local governments asked each jurisdiction to estimate (on a scale of "major", "significant", "minor", and "none") the increase in the jurisdiction's workload which might be expected following certification. This question had two parts: the current planning function (project proposal review) and inspection/enforcement.

On the part of the question related to current planning, the jurisdictions surveyed were almost evenly divided between those who felt there would be a minor increase and those who felt there would be a significant increase.

The jurisdictions had difficulty making these estimates due to the uncertainty about how the "permit function" would be carried out following certification.

It should be noted that cities and counties charge fees for processing use permits, variances, rezoning applications, subdivision and parcel maps, and in some cases design review applications. These fees seldom cover the actual costs involved. In fact, it is typical that these fees cover less than 50% of the expense incurred by the jurisdiction in pro-

cessing the applications. Many of the jurisdictions indicated they had been studying the problem and were proposing revised fee schedules to more completely reflect actual costs.

Cities and counties also recover much, if not all, of the cost of conducting environmental reviews and processing environmental impact reports pursuant to CEQA for private projects by charging fees of the applicant.

Any increase in the current planning workload due to an increased number of applications required to be processed following certification would therefore be paid for out of application and permit fees to the extent that the fee structure reflected actual processing costs.

Any increase in the number of new permits to be processed as part of the certified implementation program would be accompanied by an increase in the inspection and enforcement workload, probably in direct proportion. Inspection and enforcement is an on-going activity of local government and is therefore not tied directly to the payment of fees. In the survey, the responses were again roughly split between those that felt the increase in the inspection/enforcement workload would be significant and those that felt it would be minor.

In summary, the additional responsibilities local governments will have to assume as part of the second phase of implementation will not be known until the Coastal Commission develops more specific guidelines for implementation and local governments begin developing plans and programs for certification.

## APPENDIX A

Appendix A consists of an analysis of the possible implications of each Coastal Plan policy for local government in terms of planning and regulatory activity. Indication is made after each policy showing which level(s) of government has some responsibility for implementation. Where there appears to be some responsibility for local government implementation, indication is made of which local general plan elements, ordinances, procedures and programs are likely to be potentially affected. Such indications do not necessarily imply revision is required, only that the indicated general plan element, ordinance procedure or program should be reviewed for consistency with the Coastal Plan policy and revised as necessary. An (X) in the "no analysis" column indicates that the policy is general in nature or that its provisions are more fully detailed in other policies and therefore analysis was not considered appropriate. Under "level of government" special districts include water and sewer districts, airport and port districts, power districts and school districts. In some areas the functions of these special districts are part of the city's or county's responsibilities. Under "general plan" other elements include historic preservation (HP), and coastal design (CD). Under "ordinances", other possible ordinances not specifically identified include a parking ordinance, a design review ordinance and a condominium conversion ordinance.

### Summary Comments

Appendix A includes an analysis of all 162 policies in Part II of the Coastal Plan. One hundred and one of the policies appear to have some direct significance for local government (including special functions) in terms of implementation responsibility. Not all of these 101 policies relate exclusively to local government, since some of the policies (56) have implications for more than one level of government. Where multiple responsibility is indicated, it either means that the policies have several parts, each of which relates to a different level of government, or that there is some overlap in responsibilities between levels of government.

POLICY	IMPLEMENTATION Level of Government				LOCAL GOVERNMENT IMPLEMENTATION General Plan										Ordinances							Project Review				Building Code	Cap. Impro. Program	Land Acquis. Program
	Federal	State	Regional	Local	Special District	Land Use	Circulation	Open Space	Conservation	Housing	Safety	Seismic Safety	Noise	Scenic Highway	Others	Zoning Ordinance	Zoning Map	Sign Ordinance	Grading	Dredging	Subdivision Ordinance	Others	Proposal Review	EIR Process	Design Review			
		No Analysis																										
1. Basic Goals for Coastal Zone																												
MARINE ENVIRONMENT																												
2. Protect, Enhance, and Restore Marine Resources																												
3. Maintain Healthy Marine Organisms		X																										
4. Criteria For Aquaculture		X																										
5. Upgrade Commercial Fishing		X		X	X												X						X					
6. Expand Ocean Water Quality	X	X	X																									
7. Maintain, Manage and Restore Ocean Water Quality	X	X	X	X	X																		X	X			X	
8. Waste Water Reclamation		X	X	X	X				X																		X	
9. Vessel Waste Discharge Regulation	X	X	X																									
10. Avoidance of Adverse Effects of Thermal Discharge	X	X	X																									
11. Oil and Toxic Substance Release Prevention		X	X	X		X										X	X						X	X				
12. State Oil Spill Liability Measures		X																										
13. National Oil Spill Liability Fund		X																										
14. Runoff and Coastal Waters Degradation			X	X		X										X	X			X			X	X				
15. Special Estuary and Wetland Protection				X		X		X								X	X		X				X	X				
16. Limit Dredging, Diking, and Filling	X	X	X	X	X														X				X	X				
17. Replacement Areas Required for Diked or Filled Areas	X	X		X	X																		X	X				
18. Regulation of Permitted Dredging	X	X	X	X	X														X				X	X				

POLICY	IMPLEMENTATION Level of Government	LOCAL GOVERNMENT IMPLEMENTATION General Plan										Ordinances										Project Review				Building Code	Cap. Impro. Program	Land Acquis. Program																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
		Federal	State	Regional	Local	Special District	Land Use	Circulation	Open Space	Conservation	Housing	Safety	Seismic Safety	Noise	Scenic Highway	Others	Zoning	Ordinance	Map	Sign	Grading	Subdivision	Others	Proposal Review	EIR Process				Design Review																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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POLICY	No Analysis	IMPLEMENTATION Level of Government					LOCAL GOVERNMENT IMPLEMENTATION General Plan											Ordinances					Project Review				Building Code	Cap. Impro. Program	Land Acquis. Program		
		Federal	State	Regional	Local	Special District	Land Use	Circulation	Open Space	Conservation	Housing	Safety	Seismic Safety	Noise	Scenic Highway	Others	Zoning Ordinance	Map Zoning	Sign Ordinance	Grading	Subdivision	Others	Proposal Review	ElR Process	Design Review						
91. Existing Tanker Facilities			X		X		X																								
92. Criteria for New or Enlarged Terminals																															
93. Tanker Technology and Operations		X	X																												
94. LNG Facility Siting		X	X		X		X																								
95. LNG Facility Siting and Design	X																														
96. LNG Marine Operations		X	X																												
97. LNG On-Shore Facilities			X																												
98. Liability for Accident Damage			X																												
TRANSPORTATION																															
99. Coastal Concerns in Transportation Plans			X	X	X			X																							
100. Transportation Plans and Coastal Resources			X																												
101. Land Use Decisions and Transportation Capacity			X		X		X	X										X													
102. Coastal Road Expansion Criteria			X		X			X																			X				
103. Transportation Routes			X		X	X		X																							
104. Coastal Road Recreational and Scenic Values			X		X		X	X						X																	
105. Parking Facilities					X	X		X																				X			
106. New Development Parking					X																							X			
107. Coastal Zone Transit Funding		X	X																									X			
108. Priority of Transit Over New Roads			X	X	X	X		X																				X			

POLICY	No Analysis	IMPLEMENTATION Level of Government					LOCAL GOVERNMENT IMPLEMENTATION											Project Review										
		Federal	State	Regional	Local	Special District	Land Use	Circulation	Open Space	Conservation	Housing	Safety	Seismic Safety	Noise	Scenic Highway	Others	Zoning Ordinance	Zoning Map	Sign Ordinance	Grading	Subdivision	Others	Proposal Review	EIR Process	Design Review	Building Code	Cap. Impro. Program	Land Acquis. Program
109. Transit in Urban Areas				X	X	X	X	X																				
110. Rail Service		X	X																									
111. Transit Usage				X																								
112. Future Airport Siting			X																									
113. Coastal Airport Expansion			X		X	X		X															X					
114. Public Access in Airport Buffer Land					X	X	X	X	X																	X		
115. Air-Related Transportation and Coastal Access					X	X		X															X	X				
116. Major Port Areas	X																											
117. Maximize Existing Port Use					X	X	X	X																				
118. Port Development Dredging and Filling Criteria			X		X	X	X	X															X	X				
119. Navigational Safety		X	X																				X					
120. Coastal Ferry Service Feasibility			X																									
PUBLIC ACCESS TO THE COAST																												
121. Coastal Access	X																											
122. Guarantee for Public Access					X				X														X					
123. Public Accessways to the Coastline			X		X			X	X								X	X			X		X			X		
124. Manage Public Access			X		X					X																		
125. Lower-Cost Tourist Facilities					X		X		X								X	X					X					
126. Coastal Access for Low- and Moderate-Income Persons					X		X		X								X	X					X					

POLICY	IMPLEMENTATION Level of Government	LOCAL GOVERNMENT IMPLEMENTATION General Plan										Ordinances						Project Review			Building Code	Cap. Improv. Program	Land Acquis. Program					
		Federal	State	Regional	Local	Special District	Land Use	Circulation	Open Space	Conservation	Housing	Safety	Seismic Safety	Noise	Scenic Highway	Others	Zoning Ordinance	Zoning Map	Sign Ordinance	Grading				Subdivision Ordinance	Others	Proposal Review	EIR Process	Design Review
						No Analysis																						
127. Surplus Lands			X		X		X																					
128. Public Access and Institutional Development					X		X										X	X						X				X
129. Public Use of Federal Lands	X																											
130. Multiple Use in Major Facilities	X	X		X	X																		X					
RECREATION																												
131. Coastal Recreation and Resource Protection																												
132. Oceanfront Land Recreational Potential and Other Uses				X			X		X								X	X										
133. Commercial Recreation has Priority Over Private Development				X			X										X	X					X					
134. Shoreline Areas Reserved for Water-Dependent Recreation		X		X			X		X								X	X					X					
135. Alterations of Coast for Recreation Restricted		X		X			X		X								X	X					X					
136. Use of Upland Areas		X		X			X										X	X										X
137. Variety of Recreational Facilities		X		X			X		X								X	X					X					
138. Overnight Reservation System		X																										
139. Equity in Recreational Facility Maintenance Costs		X																										
140. Development, Open Space, and Recreation																												
141. New Development On-Site Recreation				X			X		X								X	X					X				X	X
142. Access and Recreational Use Limitations				X													X			X			X					
143. Off-Road Recreational Vehicle Use		X		X																			X					
144. Long-Range Recreational Resources Protection Program		X		X																			X					





## APPENDIX B

Appendix B consists of an analysis of each of the local government implementation program components outlined in Part III of the Coastal Plan (pages 182-183). The purpose of this analysis is to translate the local implementation program as outlined in Part III of the Plan and as detailed in the Plan policies into a set of specific tasks and thereby ascertain the total effort required of local government by the Coastal Plan. It should be pointed out that no single jurisdiction would have to carry out all of the work indicated, however, since local coastal issues vary from area to area and many local government plans and programs already are consistent with the Coastal Plan.

### Explanation of the Headings

#### Existing Requirements for Related Planning

Existing State and federal requirements for local government planning and regulation in areas of concern addressed by the program component.

#### Type of Information Required for Associated Planning Activities

Types of information necessary for local governments to carry out revision of plans, ordinances, zoning, codes and programs as required by the program component.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan

Requirements or recommendations contained in the Coastal Plan policies for State agencies to prepare plans or provide information which will be essential or useful to local governments in the implementation program.

#### Information Already Available

Information either contained in the Plan or known to be already available which will be essential or useful to local governments in the implementation program.

Existing Technical Assistance Available to Assist Local Governments  
Implementing the Coastal Plan

List of agencies and organizations which have information or can provide technical assistance to local governments in the area of concern addressed by the program component. Although references to the Office of Planning and Research are not included under this heading, OPR will be available to assist local governments with Coastal Plan implementation through direct and/or general technical assistance programs.

Commentary

General comments regarding existing regulatory authority of State, federal and regional agencies and factors which have some bearing on the scope of the local government implementation program.

Generalized Work Program

An outline, based on the above analysis, of the specific work tasks which must be undertaken in connection with the implementation program component. (To the extent that existing plans, ordinances, zoning, codes and programs already are consistent with the Coastal Plan, and to the extent that the concerns addressed by the program component are irrelevant to a jurisdiction, specific tasks can be deleted from the list).

Summary Comments

The following comments represent the summary observations of OPR relative to what is required of local governments in connection with each of the implementation program components.

A. Community Development

Jurisdictions with a substantial amount of vacant land designated for urban use may be involved in a major effort in connection with this component.

B. & C. Shoreline Recreation and Recreation Support

Much of what is required by this component is already being accomplished through local general plans and by the State. However, jurisdictions with extensive coastal frontage and/or a significant



potential for remaining recreational development will need to do the most in connection with this component.

D. Streams, Estuaries and Wetlands

Since most of what is required in this component is already being carried out or will be carried out under other authority, what is required of local governments in connection with this component does not appear to be significant.

E. Agricultural Resources

For jurisdictions where agriculture is a major issue, the effort required in connection with this component may be significant. However, if AB 15, now pending in the Legislature is enacted, much of what is required by this component will be required of all California jurisdictions.

F. Forestry Resources

Since many aspects of commercial forestry are already regulated by the State, local government responsibility in this area should not be significant.

G. Scenic Resources

Where design review procedures already exist, only minor revision of local procedures will be necessary. The protection of coastal viewsheds and the restoration of degraded visual resources may necessitate a substantial effort by many jurisdictions.

H. Man-Made Resources

Many jurisdictions already have historical preservation programs which substantially meet the requirements of this component. Those jurisdictions which do not have programs may need to do a significant amount of program development in connection with this component.

I. Wildlife and Plant Species

Since the information necessary for this component is already available or will be made available, jurisdictions will only have to develop protection measures.

J. Hazards

Since most of the requirements of this component are satisfied by existing mandated plans and programs, the additional effort required appears minor.

K. Low- and Moderate-Income Housing

This component does not appear to indicate a major effort by jurisdictions.

L. Water and/or Wastewater Service System

Due to uncertainty about the role of watershed management plans and Section 208 plans, it is difficult to say what will have to be done by jurisdictions in connection with this component.

M. Energy Facilities and Conservation

If the Warren-Alquist Act is fully implemented, additional effort required in connection with this component will be negligible.

N. Transportation System

Unless the statewide transportation plan now being prepared satisfies much of what is required by the Coastal Plan in the area of transportation, jurisdictions will have to do a significant amount of planning in connection with this component.

O. Minerals and Soils

Most of what is required by this component is already being carried out under existing authority. There may be minor work for jurisdictions in connection with this component.

P. National Interest Facilities

With the exception of military installations, all the concerns of this component are addressed in other implementation program components. No additional responsibilities for local government are indicated.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### A. Community Development

A program to encourage more efficient use of existing developed areas and the concentration of new development in already urbanized areas that can accommodate it, to control development that may singly or cumulatively have an adverse impact on coastal resources, to reserve appropriate shoreline areas for water-related activities and to protect coastal neighborhoods.  
(Policies 57-63, 154)

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (a) requires that local general plans contain a land use element which designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste, disposal facilities and other categories of public and private uses of land.
- The California Environmental Quality Act and the State EIR Guidelines require consideration of the cumulative, adverse impacts of new development.

#### Type of Information Required for Associated Planning Activities:

- Existing land use, environmental, service and utility information as needed for a general plan revision in order to comply with the policies related to this program.
- Criteria for subdivision of land.
- Identification of special coastal communities and neighborhoods for special development consideration.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

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#### Information Already Available:

- Some of the special coastal communities and neighborhoods are identified in the Coastal Plan. (Part IV)
- The Coastal Plan contains the criteria for land division (Policy 60).

#### Existing Technical Assistance Available to Assist Local Governments Implementing the Coastal Plan:

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A. Community Development

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COMMENTARY:

In jurisdictions where there remains a substantial amount of vacant land designated for urban uses, the requirement for concentrated development may necessitate a significant general plan revision. For communities substantially built out to planned potential, this requirement has less significance.

Policy 58 requires the identification of special coastal communities and neighborhoods and prescribes certain planning considerations for their protection and enhancement. To a large extent the intent of this requirement is carried out through other Coastal Plan policies, such as those relating to design review and historical resources.

Generalized Work Program:

- Revise general plan to provide for concentrated development in already developed areas.
- Revise zoning ordinance and map and capital improvement program accordingly.
- Revise general plan to give priority in the coastal area to coastal dependent developments.
- Revise zoning ordinance and map accordingly.
- Develop a program to re-divide or consolidate certain lots.
- Revise minimum lot sizes as necessary to meet criteria in natural (non-urban) areas.
- Designate special coastal communities and neighborhoods for special development and design treatment.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### B and C. Shoreline Recreation and Recreational Support

- A program to acquire and maintain accessways, open space lands, beaches, parks, and preserves, and to provide ample public recreational opportunities. This should include regulations that require dedication of public access to the coast as a condition of development in appropriate areas, that give priority to recreational developments adjacent to the coastline over other kinds of development, and that require new developments to provide adequate open space and recreational amenities.
- A program to protect upland areas for recreational support facilities and coastal-oriented commercial recreational amenities.  
(Policies 122-148).

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (a) requires that local general plans contain a land use element which designates the proposed distribution and general location and extent of the uses of the land for open space, recreation and other categories of public and private uses of the land.
- Government Code Sections 65302 (e) and 65560 et. seq. requires that local general plans contain an open space element for the preservation of open space for outdoor recreation, including areas particularly suited for park and recreation purposes (including access to beaches).
- Section 66478.11 of the State Subdivision Map Act specifies that "no local agency shall approve either the tentative or the final map of any subdivision fronting upon the coastline or shoreline which subdivision does not provide or have available reasonable public access by fee or easement from public highways to land below the ordinary high-water mark on any ocean coastline or bay shoreline shoreline within or at a reasonable distance from the subdivision".

#### Type of Information Required for Associated Planning Activities:

- Model ordinance for dedication of accessways through new developments.
- Identification of areas appropriate for bluff top paths and linear parks.
- List of areas recommended for public acquisition by any federal agency, by the State Department of Parks and Recreation, by local agencies and by the Coastal Plan.
- Open space and recreational facilities standards.
- Identification of route for State trail system
- Determination of areas acceptable under the Coastal Plan for small craft marinas, harbors of refuge, etc.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

- The State Department of Parks and Recreation is to develop planning concepts, design standards and safety criteria for coastal trails. (Policy 145)
- The State Department of Parks and Recreation shall designate State Coastal trail routes. (Policy 145)

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Program  
B and C. Shoreline Recreation and  
Recreational Support  
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Information Already Available:

- Areas recommended for acquisition are contained in California Coastline Preservation and Recreation Plan and in the 1974 State Park Bond Act program.
- The Coastal Commission is nearing completion of its recommendations for acquisition.
- The National Recreation and Parks Association has adopted standards for open space and recreational facilities.

Existing Technical Assistance Available to Assist Local Governments Implementing the Coastal Plan:

- Department of Parks and Recreation - expertise in the area of planning for recreational facilities and information on coastal resources and related recreation needs.
- Department of Navigation and Ocean Development - expertise in the area of recreation harbor development.

Commentary:

Much of what is required in this component is already being accomplished through local general plans and by the State. However, jurisdictions with extensive coastal frontage and/or a significant potential for additional coastal recreational development will need to do the most work in connection with this component.

Generalized Work Programs:

- Prepare ordinance to provide for the dedication of public access through new developments.
- Revise general plan to indicate areas of public access
- Develop plans for a system of bluff top paths, trails and linear parks, and revise general plan land use, open space and circulation elements accordingly.
- Revise general plan to give priority along coast to water or coastal-dependent development.
- Revise general plan to provide for non-water dependent recreation or recreational support in upland areas.
- Revise general plan open space/recreation element to provide for correlation of open space and recreational facilities with development.
- Revise park acquisition and development program based on above.
- Prepare ordinance to require adequate open space and recreational facilities in new residential developments.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### D. Streams, Estuaries and Wetlands.

A program for the protection of coastal estuaries and wetlands, including criteria for control of erosion, septic tanks, and wastewater discharges, and of runoff and silt entering coastal waters; and (2) restrictions on diking, filling and dredging of coastal waters and on the construction of stream-blocking structures.

(Policies 7-18, 24)

#### Existing Requirements for Related Planning:

- Government Code Sections 65302 (e) and 65560 et. seq. require that local general plans contain an open space element for the preservation of open space for natural resources, the managed production of resources, outdoor recreation and public health and safety.
- Chapter 70 of the Uniform Building Code establishes standards to control erosion.
- Section 66411 of the State Subdivision Map Act requires that local subdivision ordinances "...shall specifically provide for proper grading and erosion control, including the prevention of sedimentation or damage to off-site property".

#### Type of Information Required for Associated Planning Activities:

- Model ordinance for control of runoff, erosion and silt control.
- Identification of wetlands for protective action.
- Wetlands restoration priority list.
- Comprehensive estuarine plans (should development be proposed in wetlands - required prior to development).

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

- A runoff, erosion and silt control model ordinance shall be developed by the coastal agency, SWRCB, Division of Forestry and other involved agencies. (Policy 14)
- A restoration priority list and schedule shall be developed by the coastal agency, Department of Fish and Game, State Lands Commission and other State, federal and local agencies. (Policy 15)
- Comprehensive watershed management plans are to be prepared pursuant to the Coastal Plan by an agency to be designated. (Policy 21)

#### Information Already Available:

- The State's nineteen most productive wetlands are identified in Acquisition Priorities for the Coastal Wetlands of California and the April, 1974, report prepared by the U.S. Bureau of Sport Fisheries and Wildlife.
- Department of Fish and Game maintains an inventory of coastal wetland resources.
- Department of Parks and Recreation Coastline Preservation and Recrea-

- Coastal Commission studies of streams, estuaries and wetlands.
- Criteria for dredging is contained in the Coastal Plan (Policy 16).
- Criteria for projects that would alter natural streams is contained in the Coastal Plan (Policy 24).

Existing Technical Assistance Available to Local Governments Implementing  
The Coastal Plan:

- Department of Fish and Game - information on coastal wetland resources.
- Resource Conservation Districts - expertise in the area of control of runoff and erosion.
- Division of Forestry - expertise in the area of watershed protection, including control of runoff, erosion and siltation.

Commentary:

The Coastal Plan policies associated with this program involve numerous State, federal, regional and local agencies. Many of the policy requirements are already being carried out under existing authority or will be satisfied by on-going planning, such as development of watershed management plans pursuant to the Coastal Plan and water quality planning under 208 of the 1972 Federal Water Quality Act. Agencies which already have statutory authority for control of development and discharges affecting streams, estuaries and wetlands, include U.S. Army Corps of Engineers, State Lands Commission, State Water Resource Control Board and Regional Water Quality Control Boards, Department of Navigation and Ocean Development and Division of Forestry. Those areas in which local governments will have to develop programs are listed below.

Generalized Work Program:

- Revise general plan land use and open space elements to provide protection for streams, estuaries and wetlands.
- Revise zoning ordinance and map accordingly.
- Revise or prepare new ordinance for control of dredging (where not already controlled by the State).
- Revise or prepare a new ordinance for control of diking and filling (where not already controlled by the State).
- Prepare an ordinance to control stream-blocking structures (where not already controlled by the State).
- Adopt a runoff, erosion and silt control ordinance developed pursuant to the Coastal Plan.



## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### E. Agricultural Resources

A program for the protection of agricultural lands, including (1) the identification of agricultural lands; (2) a determination of overall land area and of the minimum size parcels in long-term production; (3) the prohibition of divisions of land or other development inconsistent with continued agricultural use; (4) the establishment of buffer areas on the urban fringe to protect agricultural lands from urban intrusion; and (5) limitations of special assessments of agricultural lands for public services (e.g., sewer and water) to serve urban needs not generated by the agricultural lands themselves.

(Policies 30-37)

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (a) requires that local general plans contain a land use element which designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture and other categories of public and private uses of the land.
- Government Code Sections 65302 (e) and 65560 et. seq. requires that local general plans contain an open space element for the preservation of open space for managed production of resources, including range and agricultural lands and areas of economic importance for the production of food or fiber.

#### Type of Information Required for Associated Planning Activities:

- Identification of soils suited to agricultural use.
- Identification of agricultural land currently under production.
- Study of subregional agriculture economy to determine minimum area and parcel sizes for long term economic viability of agriculture.
- Information on the service potential of the sewer system, water system, road system, etc.
- Identification of the parcels of land on the urban fringe which should remain in agriculture and those that may be converted.
- Criteria for designation of remaining agricultural parcels within highly developed areas to remain in agriculture.
- Identification of the parcels within highly developed areas to remain in agriculture.
- Criteria for maintaining non-prime agricultural lands in production.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

- In some areas, not yet designated, subregional plans may provide much of the information required for this program. (Policy 162).

Information Already Available:

- Open space elements of general plans should contain an identification of productive agricultural lands.
- Information on soils and suitability for agriculture and agricultural resources is available from U.S. Soil Conservation Service, Department of Water Resources, Office of Planning and Research, local agricultural extension and county agricultural commissioners.
- Criteria for designation of remaining agricultural parcels within highly developed areas to remain in agriculture is contained in the Coastal Plan, (Policy 33).
- Criteria for maintaining non-prime agricultural lands in production is contained in the Coastal Plan (Policy 34).

Existing Technical Assistance Available to Local Governments Implementing the Coastal Plan:

- U.S. Soil Conservation Service - information on soils and soils capability.
- Department of Food and Agriculture - assistance to local governments in administering the Williamson Act.
- University of California Agricultural Extension.
- Department of Conservation - administration of the Williamson Act and the Open Space Subvention Program.

Commentary:

Because agriculture is an areawide activity and concern, the general background research and planning necessary for implementation of this program will likely be carried out within the context of a subregional planning effort at least where such planning is justified by the amount of land in the area devoted to agriculture. This subregional plan should provide local governments with much of the necessary information. The degree to which local governments would have to supply the information for the subregional plan is not known.

Currently pending in the State Legislature is AB 15 (Agricultural Lands: State Regulation) which would require mapping in cities and counties of prime agricultural soils and require cities and counties to amend or adopt plans, policies, ordinances and regulations to limit the subdivision of agricultural lands. This bill, if enacted into law, would satisfy much of what is required as part of this implementation program component.

For those jurisdictions where agriculture is a significant consideration, the amount of time and planning effort required to carry out this component may be significant.

Generalized Work Program:

- Identify areas with prime soils and areas currently in production.
- Study of subregional agriculture economy to determine overall land area and minimum size parcels in long-term production.
- Establish stable urban/rural boundaries by revising general plan, designating areas to remain in agriculture, and designating areas for conversion of agricultural lands to urban uses.

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Program  
E. Agricultural Resources  
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- Identify agricultural parcels within highly developed areas and designate which are to remain in agriculture.
- Revise zoning ordinance and map accordingly.
- Revise zoning ordinance and map to permit only agriculturally related developments on agricultural lands.
- Revise zoning ordinance and map to provide for minimum lot sizes in agricultural areas to maintain economic viability.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### F. Forestry Resources

A program, consistent with the Forest Practice Act, for the protection of forestry resources through policies on conversion or subdivision of forest lands, the protection of coastal streams, and the preservation of highly scenic coastal timberlands. (Policy 38)

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (d) requires that local general plans contain a conservation element for the conservation, development and utilization of natural resources, including forests.
- Government Code Sections 65302 (e) and 65560 et. seq. require that local general plan contain an open space element for the preservation of open space for managed production of resources, including forest lands.

#### Type of Information Required for Associated Planning Activities:

- Model ordinance for the control of timberland conversion to other uses.
- Model ordinance for the control of timberland subdivision.
- Model ordinance for the control of the visual impact of logging activities.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

- Comprehensive watershed management plans which should provide for the management of forestry resources (Policy 38).

#### Information Already Available:

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#### Existing Technical Assistance Available to Assist Local Governments Implementing the Coastal Plan:

Division of Forestry

Commentary:

The Forest Practice Act of 1973 provides for the regulation of commercial forestry through review of Timber Harvest Plans and regulation of conversion of timberland to other uses. Timber Harvest Plans must provide for erosion control methods and protection of unique areas. However, aesthetic considerations, to the extent called for in the Coastal Plan, are not required as part of Timber Harvest Plans.

Policy 38 provides that..."forestry resources shall be managed as part of comprehensive watershed management plans, as set forth in Policies 21-25." The implications of this for local governments are not clear.

It appears that implementation of Policy 38 would require revision of the local general plan (possibly) and ordinances as outlined below.

Generalized Work Program:

- Revise General Plan land use, open space and conservation elements to provide for the long term protection of forestry resources.
- Revise or prepare ordinance for the control of the conversion of timberlands to other uses.
- Revise or prepare ordinance for the control of the division of timberlands into un-economic units (e.g., minimum parcel size requirement in areas zoned for forestry).
- Revise ordinance to require buffer areas to screen new logging operations from public view and to provide for other aesthetic controls on logging activities.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### G. Scenic Resources

A program for the designation of highly scenic areas and coastal viewsheds, and procedures and standards to review the design of new development consistent with the design policies of the Coastal Plan.

(Policies 44-56, 152)

#### Existing requirements for Related Planning:

- Government Code Section 65302 (a) requires that local general plans contain a land use element which designates the proposed general distribution and general location and extent of the uses of the land for open space, including enjoyment of scenic beauty.
- Government Code Sections 65302 (e) and 65560 et. seq. require that local general plans contain an open space element for the preservation of open space for outdoor recreation, including areas of outstanding scenic value.
- Government Code Section 65302 (h) requires that local general plans contain a scenic highway element for the development, establishment and protection of scenic highways.

#### Type of Information Required for Associated Planning Activities:

- Identification of highly scenic areas and coastal viewsheds.
- Guidelines, criteria and standards to be used in the design review procedure.
- "Detailed studies of the oceanfront area to be used as a basis for 'definitive design criteria' for improving the appearance of the shoreline." (Policy 46).

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

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#### Information Already Available:

- The Coastal Plan sets forth design criteria, guidelines and standards to be used in local design review procedures. (Policies 47, 49-56).
- The California Roadside Council can provide local government with information on sign control programs.

#### Existing Technical Assistance Available to Assist Local Governments Implementing the Coastal Plan:

- CALTRANS - expertise in the development of scenic highway plans.

Commentary:

Policy 46 requires that local governments within the coastal viewshed shall prepare and implement design procedures and standards as part of their general plans. The most appropriate vehicle for implementation of this requirement within general plans appears to be a coastal design element which sets forth the criteria and standards for appearance and design within the coastal area. Beyond this, however, local governments would have to adopt a design review ordinance further specifying criteria and standards and providing for design review of project proposals. Design review could be carried out by staff or by a design review board as suggested in Policy 47.

Policy 47 call for "...definitive design criteria for improving the appearance of the shoreline based on detailed studies of the oceanfront area carried out by cities and counties". This apparent requirement for an active aesthetic rehabilitation program is reinforced by Policy 154, which requires "... the coastal agency, working with local municipalities and citizens, to prepare a long-range plan for the restoration of desired visual quality and character of degraded coastal areas". There is insufficient information in Policies 47 and 154 to determine the scope of this aesthetic rehabilitation program and the role of local government in carrying out such a program.

Generalized Work Program:

- Identify highly scenic areas and coastal viewsheds.
- Revise general plan land use and open space elements for the protection of these areas.
- Establish design review procedure and standards.
- Conduct study of oceanfront area and develop program for improving the appearance of the shoreline.
- Revise or prepare a sign ordinance consistent with Policy 54.
- Prepare in cooperation with public utilities (specifically telephone and electricity) a program for undergrounding utility lines.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### H. Man-Made Resources

A program for the protection of man-made resources, such as sites of unique cultural, historical, architectural, or archaeological significance.

(Policies 44, 45, 151)

#### Existing Requirements for Related Planning:

- Government Code Sections 65302 (e) and 65560 et. seq. requires that local general plans contain an open space element for the preservation of open space for outdoor recreation, including areas of outstanding scenic, historic and cultural value.
- Government Code Section 65303 provides for the optional inclusion of a historical preservation element as part of local general plans.
- California Environmental Quality Act and State EIR Guidelines.

#### Type of Information Required for Associated Planning Activities:

- Inventory of archaeological and paleontological sites.
- Inventory/survey of historical resources.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

- The State Historic Preservation Officer shall survey archaeological and paleontological sites along the coast. (Policy 151)
- The legislature, or an appropriate State agency designated by the legislature, is urged to (1) formulate criteria for determining which resources are "significant" and (2) develop a program for protection and, where appropriate, professional evaluation and study of resources. (Policy 151).

#### Information Already Available:

##### Archaeological resources:

- University of California and State universities
- Department of Parks and Recreation

##### Historical Resources:

- National Register of Historic Sites
- Department of Parks and Recreation (California History Plan)
- Local historical societies



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H. Man-made Resources

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Existing Technical Assistance Available to Local Governments Implementing the Coastal Plan:

- University of California and State universities and the Department of Parks and Recreation - information on known archaeological sites.
- The Office of Planning and Research is publishing a handbook on preparation of a historical preservation element to the local general plan. (Available by mid 1976).

Commentary:

Ultimately, according to the Coastal Plan, archaeological resources would be surveyed by the State Historic Preservation Officer and protected by strengthened State law. In the interim, the Plan calls for a systematic survey of known or suspected archaeological sites which would be affected by proposed development. This interim policy could be carried out through locally adopted procedures pursuant to CEQA.

The requirement for the protection of historically or architecturally significant resources is contained in Policies 44-45. Since most cities within the coastal area are already involved in some sort of historical preservation program, the Coastal Plan requirements involve little more than a continuation of current efforts. However, in jurisdictions where programs have not been developed, this program component may necessitate considerable work.

Generalized Work Program:

- Identify historical resources and develop a program for the protection and enhancement of these resources.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM:

#### I. Wildlife and Plant Communities

A program for the protection of areas designated as important or significant coastal natural living communities (as identified by appropriate State and federal agencies or in the Coastal Plan), including controls on the use and development of such areas and immediately adjacent lands.

(Policies 26-29)

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (e) and 65560 et. seq. require that local general plans contain an open space element for preservation of natural resources, including areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for the ecologic and other scientific study purposes; rivers, streams, bays and estuaries; and coastal beaches, lake shores, banks of rivers and streams, and watershed lands.
- The California Environmental Quality Act and the State EIR Guidelines require consideration of how projects affect rare or endangered species of animal or plant, or habitat of such a species (Section 15081 of the EIR Guidelines).
- State Public Resources Code Section 5001.5 provides protection for rare and endangered living communities.

#### Type of Information Required for Associated Planning Activities:

- Identification of rare and endangered wildlife species.
- Identification of rare and endangered plant species.
- Identification of important or significant habitat areas.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

- State and federal agencies are to identify important or significant coastal natural living communities (beyond those already identified in the Coastal Plan). (Policy 150).

#### Information Already Available:

- At the Crossroads, Department of Fish and Game, - listing by location of rare and endangered wildlife species.
- The California Native Plant Society maintains a list by area of rare and endangered plant species.
- Certain habitat areas are identified in the Coastal Plan as in need of protection. (Part IV)

Existing Technical Assistance Available to Local Governments Implementing  
the Coastal Plan:

- Department of Fish and Game - information on fragile habitat areas and rare and endangered wildlife and plant species.
- Department of Parks and Recreation - information on fragile habitat areas and rare and endangered wildlife and plant species.
- California Native Plant Society - information on the location of rare and endangered plant species.

Commentary:

The information concerning the location of rare and endangered plant and wildlife species and fragile habitat areas is for the most part already available or will be made available by State and federal agencies in conjunction with further coastal planning activities. The work remaining for local governments in implementing this program is therefore basically limited to the development of protection measures.

Generalized Work Program:

- Revise general plan to provide protection for identified habitat areas.
- Revise zoning ordinances and map for the protection of identified habitat areas, and the banks of rivers, streams and lagoons.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### J. Hazards

A program for the avoidance of risks and public costs in areas of high geologic- or flood-hazard.

(Policies 64-70)

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (a) requires that local general plans contain a land use element which identifies areas subject to flooding.
- Government Code Section 65302 (f) requires that local general plans contain a seismic safety element which includes an identification and appraisal of seismic hazards, including surface rupture, ground shaking, ground fracture, mud slides, land slide (slope stability) and seismically-induced waves such as tsunami and seiches.
- Government Code Section 65302 (i) requires that local general plans contain a safety element for protection of the community from fires and geologic hazards including features necessary for such protection as evacuation routes, peak load water supply requirements, and geologic hazard mapping.
- City and county participation in the National Flood Insurance Program (Flood Disaster Protection Act of 1973) requires mapping of flood-prone areas and land use controls within the flood-prone area.
- The Cobey-Alquist Flood Plain Act now requires establishment of flood plain regulations as a condition of State contributions toward the costs of land, easements and rights-of-way for local flood control projects.
- The Alquist Priolo Special Studies Zones Act requires the delineation of special study zones along known active faults and requires geologic investigations within these zones prior to development.
- The Field Act requires the abatement of hazardous school buildings.
- Local governments are required to adopt building codes consistent with Chapter 23 (earthquake resistant structures) and Chapter 70 (grading) of the Uniform Building Code.

#### Type of Information Required for Associated Planning Activities:

- Identification of flood-hazard areas.
- Identification of areas of geologic hazard (i.e., areas subject to surface faulting, ground failure, land slide, mud slide, ground shaking and tsunami run up.)
- Inventory of existing high-occupance buildings within areas of high geologic hazard.
- Standards for demonstration of stability report.

Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

It is recommended that the State Division of Mines and Geology be empowered and funded to designate geologic risk areas, ...impose appropriate land use and building regulations related to the areas, ... establish project review criteria. (Policy 65)

Information Already Available:

- Maps of flood-prone areas are available from Army Corps of Engineers, USGS, HUD.
- Seismic safety elements should contain all necessary information on geologically hazardous areas.
- USGS has mapped tsunami run-up areas along much of the coast.
- U.S. Army Corps of Engineers has mapped possible tsunami run up in Southern California.
- Division of Mines has mapped slope stability in many coastal areas.
- Standards for bluff and cliff development are contained in the Coastal Plan (Policy 70).

Existing Technical Assistance Available to Local Governments Implementing the Coastal Plan:

- The State Seismic Safety Commission - expertise in the area of abatement of hazardous structures.
- The Office of Emergency Services - expertise in the area of disaster preparedness plans.
- U.S. Army Corps of Engineers - information on flooding.
- U.S. Geological Survey - information on all forms of geologic hazards.
- Division of Mines and Geology - information on all forms of geologic hazards.

Commentary:

Existing State and federal requirements are considered adequate to carry out most of the requirements of the Coastal Plan policies regarding development in hazardous areas. Those aspects addressed in the Coastal Plan but not covered by known existing State and federal requirements are outlined below.

Generalized Work Program:

- Revise disaster preparedness plan to include an emergency warning system for tsunami occurrence
- Revise ordinances for the protection of cliff and bluffs.
- Identify high occupancy structures within areas of high geologic hazard and develop a program to phase these structures out or otherwise protect them.
- Prepare ordinance to control reconstruction of structures rendered unfit for human occupancy by geologic instabilities.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### K. Low- and Moderate-Income Housing.

A program for the protection and, where necessary, rehabilitation of existing low- and moderate-income housing, and provision, to the extent available in federal, State, or local housing programs, for a significant amount of such housing opportunities in new developments.

(Policy 126)

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (c) requires that local general plans contain a housing element which shall make adequate provision for the housing needs of all economic segments of the community.
- Cities and counties participating in Community Development Block Grant program (Housing and Community Development Act of 1974) are required to prepare Housing Assistance Plans which identify and provide for the housing needs of low- and moderate-income people.

#### Type of Information Required for Associated Planning Activities:

- Survey of housing stock in coastal neighborhoods (by unit type, tenure, cost).
- Information on the distribution of low and moderate income people in coastal neighborhoods.
- Information on implementation measures and sources of housing financing.
- Model ordinance for condominium conversion.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

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#### Information Already Available:

- 1970 federal census for information on housing and population.
- Special State census (conducted in recent years in many jurisdictions).
- Housing Assistance Plan (prepared for the Community Development Block Grant program).
- Adopted housing element.
- Criteria for condominium conversion is contained in the Coastal Plan (Policy 126 c).

Existing Technical Assistance Available to Local Governments Implementing  
the Coastal Plan:

- Department of Housing and Community Development - information preparation of housing studies, rehabilitation, neighborhood preservation.
- Department of Housing and Urban Development.
- Housing Finance Agency.

Commentary:

The existing State requirement for a housing element and federal requirement for a Housing Assistance Plan for cities and counties receiving funds through the Community Development Block Grant program, generally address the need for new and rehabilitated housing for low- and moderate-income people. The emphasis in Policy 126 is on coastal neighborhoods. This new emphasis may require revision of the housing element in some jurisdictions.

Generalized Work Program:

- Revise general plan housing element to provide for housing in coastal neighborhoods for low- and moderate-income people.
- Revise or prepare condominium conversion ordinance consistent with Policy 126 (c).

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### L. Water and/or Wastewater Service System

Programs for (1) the conservation of water supplies, including but not limited to a water management program, impervious surface limitations, and other development standards to protect ground water and drainage areas; (2) the reclamation and reuse of waste water; and (3) the correlation of development with approved water management plans. (Policies 21-24)

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (d) requires that local general plans contain a conservation element for the conservation of natural resources including water and its hydraulic forces. It also requires that the conservation element shall be developed in coordination with any county-wide water agency and with all district and city agencies which have developed, served, controlled or conserved water for any purpose for the county or city for which the plan is prepared.
- Government Code Section 65302 (e) and 65560 et. seq. requires that local general plans contain an open space element for the preservation of open space for natural resources, the managed production of resources and public health and safety, specifically including rivers, streams, bays and estuaries, coastal beaches, lake shores, banks of rivers and streams, watershed lands, areas required for recharge of ground water basins and areas required for the protection of water quality.

#### Type of Information Required for Associated Planning Activities:

- Information contained in the watershed management plans.
- Information on available water supplies.
- Model ordinances for limitation of impervious surfaces and development standards for protection of ground water and surface drainage area.
- Model building code sections requiring water conservation measures.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

- Comprehensive watershed management plans are to be prepared under the direction of a lead agency to be designated by the legislature. (Policy 21)

#### Information Already Available:

- Regional water quality control plans.
- Areawide waste treatment management plans under section 208 of the 1972 Water Quality Act will provide much information on non-point pollution sources, waste discharge and other water quality related matters.



Coastal Plan Local Implementation  
Program

L. Water and/or Wastewater Serv. System  
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Existing Technical Assistance Available to Assist Local Governments  
Implementing the Coastal Plan:

- Department of Water Resources - information on land use, population and present and future water needs.
- State Water Resources Control Board and Regional Water Quality Control Boards.
- Countywide water agencies.
- Department of Fish and Game - information on water quality problems resulting from logging, road construction, dredging and other activities.

Summary and Comments:

The Coastal Plan requires that comprehensive watershed management plans be prepared and that these be incorporated into local government coastal plans. The comprehensive watershed management plans are broad in scope and will address many areas of concern to local government. Although it appears that watershed management plans will provide much of the information necessary to local government implementation planning efforts, there are at least two problems: (1) the level of detail in the watershed management plans may be insufficient for direct local implementation, and (2) these plans are not required to be completed for four years following Coastal Plan enactment while local governments must develop local plans for certification within three years.

Another program affecting local implementation of this component is the water quality planning being carried out regionally and statewide under section 208 of the Federal Water Quality Act of 1972. Many, but not all of the concerns included in the watershed management plans will be addressed in 208 plans. Although the governmental mechanism for implementing 208 plans has not yet been specified by the federal government, local governments will eventually have to comply with these plans and thereby satisfy many of the requirements of the policies related to this implementation program.

Generalized Work Program:

- Because of the uncertainty about the role of local governments in the preparation of watershed management plans, it is impossible to specify amount of work to be done in subject areas covered by the watershed management plan.
- Revise general plan and ordinances pursuant to the watershed management plan.
- Revise general plan to bring population and land use allocations into accord with the limits of the water supply (for water supply agencies this would involve inventory of water supplies and revision of water supply plans consistent with the watershed management plans),
- Develop or revise ordinances controlling imperious surface, flood plain development, and development standards designed to protect groundwater and surface drainage areas.
- Revise conservation element of general plan to provide for water conservation.
- Revise building code to incorporate water conservation resources.
- Implement programs for water reclamation and monitoring of private

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### M. Energy Facilities and Conservation

Programs for (1) the siting of energy facilities, reflecting national, State and local interests; (2) the protection of areas surrounding such facilities from incompatible uses; (3) energy conservation measures in new developments to the extent these may not be required if not part of a statewide program. (Policies 71-98)

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (a) requires that local general plans contain a land use element which designates the proposed general distribution and general location and extent of the uses of the land for...industry...and other categories of public and private uses of land.
- The Warren-Alquist Energy Act provides that the Energy Commission shall prescribe energy conserving construction standards which shall be adopted by local governments.
- SB 277 and SB 144 require insulation in residential and non-residential development for conservation of energy.
- Since January, 1975, energy conservation is a required consideration in all Environmental Impact Reports.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

- The Coastal Plan recommends that a State-financed program directed by the Department of Housing and Community Development be instituted to provide in-service training for building inspections to administer the energy budget code. (Policy 72).

#### Information Already Available:

- The locations of existing proposed and potential coastal energy facilities are identified in the Coastal Plan.
- The Coastal Plan contains recommended energy conservation specification standards. (Policy 72).

#### Existing Technical Assistance Available to Assist Local Governments Implementing the Coastal Plan:

- A number of State agencies are involved in the siting of energy facilities, including the Energy Commission, State Lands Commission, Public Utilities Commission, Air Resources Board, Regional Air Pollution Control District, Regional Water Quality Control Board, Division of Oil and Gas.

## Coastal Plan Local Implementation

### Program

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#### Commentary:

Local governments, while responsible for land use planning within their jurisdiction, are only one of many agencies involved in the siting of energy facilities. For this reason there is little that local governments can do independent of these other agencies to plan for the siting of energy facilities. Once decisions are made regarding the location of new facilities or expansion of existing facilities, local land use decisions can be made regarding the general plan and zoning and provision made for compatible land use adjacent to the facilities.

The Warren-Alquist Act provides that the Energy Commission will establish energy conserving construction standards in new developments which shall be adopted by local governments. This Act, "if carried out in a timely and effective manner, will achieve the goals of..." Policy 72. Only in the event that an energy conservation program is not in effect statewide by July 1, 1977, will local governments have to implement a local energy conservation program.

#### Generalized Work Program:

- Revise General Plan to reflect the location of new energy facilities or the expansion of existing energy facilities and to provide for compatible land use surrounding such facilities.
- Revise zoning ordinances and map accordingly.
- Enact energy budget code as part of building codes in the event that an energy conservation program pursuant to the Warren-Alquist Act is not in effect statewide by July 1, 1977.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### N. Transportation System

Programs for (1) the correlation of development with the capacities of existing future transportation systems; (2) the provision of recreational access to the coast; (3) the protection of air quality through transportation systems that reduce pollution; and (4) requiring, in certain areas, the payment of fees by developers (in lieu of parking spaces) for the purpose of constructing central parking facilities or establishing other transportation systems.

(Policies 99-120)

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (b) requires that local general plans contain a circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan.
- Government Code Section 65302 (h) requires that local general plans contain a scenic highway element for the development, establishment and protection of scenic highways.

#### Type of Information Required for Associated Planning Activities:

- Traffic counts, and trip end generation figures for revision of the transportation plan/circulation element to include consideration of weekend, holiday and special event travel.
- Identification of appropriate locations for bike paths and lanes.
- Capacity budget (including existing capacity, existing level of usage, remaining capacity).
- Needs assessment for new or expanded roads.
- Study of parking needs and access to the coast.
- Study of expansion of public transit systems.
- Expansion needs/plans of airports and ports.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

- CALTRANS and regional transportation planning agencies are to participate in revising transportation plans/circulation elements to include consideration of weekend, holiday and special event travel.(Policy 99).

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N. Transportation System  
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- The Coastal Agency and Caltrans are to assign uses for the remaining capacity of the road system. (Policy 101).
- Caltrans shall designate Highway 1 and all eligible State highways and county roads within the zone as part of the State Scenic Highway program. (Policy 104).
- Port dredging and filling will be approved by Caltrans/DNOD/Coastal Agency. (Policy 118).

Information Already Available:

- Traffic count data and trip end generation rate studies available from Caltrans.
- State designated scenic highways.
- Scenic highway element of local general plan.
- Each port will be required to prepare a master plan.

Existing Technical Assistance Available to Assist Local Governments  
Implementing the Coastal Plan:

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Commentary:

This implementation program is quite involved and affects all forms of transportation and transportation-related facilities.

Of particular significance to local government is the land use implications of road capacity budgeting. Following the determination by the Coastal Agency and CALTRANS of remaining capacity and the assigning of uses for that capacity, local general plan land use elements and zoning will have to be brought into accord.

The California Transportation Plan is now being drafted, and it is not known to what extent the transportation policies of the Coastal Plan will be satisfied by the Transportation Plan.

This program is one of the most significant of the implementation program components in terms of the magnitude of the local planning effort necessary to revise plans, ordinances, zoning, programs and procedures.

Generalized Work Program:

- Revise circulation element to recognize weekend, holiday and special event travel needs.
- Develop bike path and lane section of general plan circulation element.
- Revise circulation element consistent with standards for new or expanded roads.
- Revise general plan land use element to reflect the constraints imposed by the road system.
- Revise capital improvement program accordingly.
- Revise scenic highway element where necessary.
- Revise zoning ordinance and map to provide for protection of scenic qualities of roadway scenic corridors.

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- Study and revise bus routing and scheduling to provide transportation from existing centralized parking lots to the coast, and to serve the needs of recreational users.
- Develop new parking standards and parking structure design standards.
- Develop in-lieu fee system for parking requirements in new developments.
- Revise general plan to accommodate expansion of airport and port facilities.
- Revise zoning map accordingly.

## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### 0. Minerals and Soils

A program for the protection of soil and mineral resources (including sand and gravel) through regulations on building, grading, runoff, erosion, dust, waste materials and spoils disposal, and the reclamation of extractive sites.

(Policies 40-42)

#### Existing Requirements for Related Planning:

- Government Code Section 65302 (d) requires that local general plans contain a conservation element for the conservation, development and utilization of natural resources including soils, minerals and other natural resources.
- Government Code Sections 65302 (e) and 65560 require that local general plans contain open space elements for the preservation of open space used for the managed production of resources, (including agricultural lands and areas containing major mineral deposits).
- The Surface Mining and Reclamation Act of 1975 will require cities and counties to establish mineral resource management policies to be incorporated into their general plans. (However, this State policy does not include aspects of regulating surface mining operations which are solely of local concern such as noise, dust, fencing and purely aesthetic considerations.)
- California Environmental Quality Act and the State EIR Guidelines.

#### Type of Information Required for Associated Planning Activities:

- Location of mineral deposits and productive soils.

#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

- It is recommended that uniform statewide regulations be adopted and enforced to provide appropriate standards for mining-related noise, dust, surface water pollution, waste materials and spoils disposal and reclamation of extractive sites. (Policy 41).
- Comprehensive watershed management plans shall include designation of appropriate mining sites. (Policy 42).

#### Information Already Available:

- Soils information is available from the Soil Conservation Service, and the Department of Water Resources.
- The open space and conservation elements of the general plan should contain identification of productive soils.

Coastal Plan Local Implementation

Program

0. Minerals and Soils

Page 2

- The open space and conservation elements of the general plan should contain identification of major mineral deposits.
- Under SB756 the Division of Mines and Geology will be inventorying mineral resources within urban and urbanizing areas.

Existing Technical Assistance Available to Assist Local Governments  
Implementing the Coastal Plan:

- The Williamson Act and Open Space Subvention programs through the Department of Conservation provides incentives for preservation of productive agricultural lands.
- Resource Conservation Districts (covering most of the coast) - expertise in the area of soils surveys, runoff control and erosion control.
- Department of Navigation and Ocean Development - expertise regarding the problems of beach erosion and the means of stabilization of beach and shoreline areas.

Commentary:

The Surface Mining and Reclamation Act of 1975 (SB756) provides for the identification of mineral deposits and conservation and development of identified mineral deposits, and control of the impacts of mining operations. Local governments are required to adopt mining regulations developed by the Division of Mines and Geology.

The Regional Water Quality Control Boards have authority over mining operations, including dredging and spoils disposal.

The Regional Air Pollution Control Districts have authority over mining operations as point sources of air pollution.

For the most part, the policies related to minerals and soils component are being carried out under existing authority.

Generalized Work Program:

- Revise or prepare ordinances to control grading, runoff, erosion, dust, waste materials and spoils disposal and reclamation of extractive sites to the extent that these are not controlled by the Division of Mines and Geology under SB756, the Regional Water Quality Control Boards, and Regional Air Pollution Control Districts.



## COASTAL PLAN LOCAL IMPLEMENTATION PROGRAM

### IMPLEMENTATION PROGRAM COMPONENT:

#### P. National Interest Facilities

A program for the consideration of the siting of facilities in the national interest, including but not limited to national defense installations, energy production facilities, and resources production areas, and the protection of areas surrounding such facilities from incompatible uses.

#### Existing Requirements for Related Planning:

Government Code Section 65302 (a) requires that local general plans contain a land use element which designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities and other categories of public and private uses of land.

#### Type of Information Required for Planning Activities:

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#### Information and Assistance to be Provided by State Agencies Pursuant to the Coastal Plan:

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#### Information Already Available:

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#### Existing Technical Assistance Available to Assist Local Governments Implementing the Coastal Plan:

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#### Commentary:

With the exception of military installations all the concerns of this component are addressed in other implementation program components (e.g., E, F, M, O).

## APPENDIX C

Appendix C is a summary of a survey conducted by the Office of Planning and Research. The five counties and twelve cities surveyed were selected as a cross section of jurisdictions lying entirely or partly within the Coastal Resource Management Area. The staff of each jurisdiction (in most cases the planning director) was asked a series of questions about the jurisdiction, the effect of the Coastal Plan on the jurisdiction, and the amount of work that appeared to be required of the jurisdiction to implement the Coastal Plan.

Under Survey Questions, the first five questions relate to the existence of plans or programs specifically mentioned in the Coastal Plan. The existence of these plans would reduce the effort required of a jurisdiction as part of the implementation program. The second five questions relate to special functions which may or may not be part of the jurisdiction's responsibility of the jurisdiction, the scope of the jurisdiction's implementation program is likely to be larger.

Under Degree of Impact, all sixteen of the local implementation program components outlined in Part III of the Coastal Plan are listed. The "impact" in this case is the relative importance of the issues addressed by each component to the jurisdiction. Since local plans and programs may be in basic conformity with the Coastal Plan, a "significant" indication does not necessarily mean that a significant level of added responsibilities or tasks will be required, only that starting anew would require a great deal of staff effort.

Under Implementation (Second Phase), the responses are based on a four-choice scale of "major", "significant", "minor" and "none".

CITIES AND COUNTIES SURVEYED	CHARACTERISTICS				SURVEY QUESTIONS										
	Population (1975 Department of Finance Estimate)	Miles of Coastline	Percentage of Developable Land Developed (Cities)	Number of professional planners in planning Dept.	Does jurisdiction already have design review process?	Does jurisdiction already have a sign ordinance?	Does seis. saf. element contain ident. of exist. high occup-struct. within haz. areas?	Does jurisdiction have a Disaster Preparedness Plan?	Has jurisd. dev. a hous. assis. plan for the C.D. Block Grant Program?	Does jurisdiction act as a water agent (retailer)?	Does jurisdiction operate sewage facilities?	Does jurisdiction operate a bus service?	Does jurisdiction operate/own an airport?	Does jurisdiction operate/own a port or marina facility?	
EUREKA	24,500	4-5	85%	6	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	
MENDOCINO CO.	57,500	100+	-	7	N	Y	N	Y	Y	N	N	N	-	-	
FORT BRAGG	5,025	1 1/2	90-95%	1/2	N	Y	N	Y	Y	Y	N	N	N	N	
SANTA CRUZ CO.	148,400	50	-	9	Y	Y	N	Y	Y	N	N	N	N	N	
WATSONVILLE	17,100	-0-	50-60%	3	Y	Y	Y	Y	Y	Y	N	N	Y	N	
PACIFIC GROVE	16,800	2 1/2	85%	2	Y	Y	N	Y	N	N	Y	Y	N	N	
SAN LUIS OBISPO CO.	127,700	89	-	16	N	Y	Y	Y	N	Y	Y	N	Y	N	
MORRO BAY	8,875	5	70%	1	N	Y	Y	Y	N	Y	Y	N	N	N	
SANTA BARBARA	74,000	5-6	80-85%	6	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
VENTURA	62,900	5	90%	9	Y	Y	Y	Y	Y	Y	Y	Y	N	N	
MANHATTAN BEACH	33,600	2	99%	3	N	Y	N	Y	N	Y	N	Y	N	N	
REDONDO BEACH	64,400	2	100%	4	N	Y	Y	Y	Y	N	Y	N	N	Y	
ORANGE CO.	1,683,300	35	-	46	Y	Y	N	Y	Y	Y	N	N	Y	N	
NEWPORT BEACH	60,300	6	85%	10	N	Y	Y	Y	Y	Y	N	N	N	Y	
SAN DIEGO CO.	1,446,400	100+	-	41	N	Y	Y	N	Y	N	N	N	Y	N	
SAN DIEGO	766,100	20	70-80%	66	Y	Y	Y	Y	Y	Y	Y	Y	N	N	
NATIONAL CITY	41,750	3 1/2	90%	5	N	Y	N	Y	Y	N	N	N	N	N	

DEGREE OF IMPACT (S) Significant (M) Minor (-) Not Applicable																IMPLEMENTATION		
																FIRST PHASE	SECOND PHASE	
A. Community Development	B. Shoreline Recreation	C. Recreational Support	D. Streams, Estuaries and Wetlands	E. Agricultural Resources	F. Forestry Resources	G. Scenic Resources	H. Manmade Resources	I. Wildlife and Plant Communities	J. Hazards	K. Low- and Moderate-Income Housing	L. Water and/or Wastewater Service System	M. Energy Facilities and Conservation	N. Transportation System	O. Minerals and Soils	P. National Interest Facilities	Estimate of costs for preparing implementation programs for certification (staff, consultants, meetings, materials).	Estimate of increase in current planning (permit function) work load following certification.	Estimate of increase in inspection/enforcement work load following certification.
S	S	S	S	M	M	S	S	S	S	S	S	S	M	M	S	\$50-75,000	Sig.	Sig.
S	S	S	S	S	S	S	S	S	S	S	S	M	S	S	M	\$65-75,000	Sig.	Minor
S	S	S	S	M	M	S	S	S	S	S	S	M	M	M	-	\$25,000	Sig.	Minor
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	\$10,000	Minor	Minor
S	M	M	S	S	-	S	S	S	S	S	S	M	M	S	-	\$20-30,000	Sig.	Sig.
S	M	M	M	-	-	S	S	S	M	S	S	M	S	M	M	-	Sig.	Sig.
S	S	S	S	S	-	S	M	M	M	S	M	S	M	M	S	\$40-60,000	Minor	Minor
S	S	S	S	-	-	M	M	S	M	S	S	S	M	M	S	\$20,000	Minor	Sig.
S	S	S	M	-	-	S	S	M	S	S	M	S	M	M	M	under \$25,000	Minor	Minor
S	M	M	M	S	-	S	S	M	M	S	S	S	M	M	M	\$75-100,000	Minor	Sig.
S	S	S	M	-	-	S	M	-	M	S	M	M	M	-	-	\$20,000	Minor	Minor
S	S	S	M	-	-	M	M	-	M	S	M	S	M	-	-	\$50-75,000	Minor	Minor
S	M	S	M	S	-	S	M	M	M	S	S	M	S	M	M	-	Sig.	-
S	S	S	S	-	-	S	S	S	S	S	S	M	S	-	-	\$20-60,000	Minor	None
S	S	S	M	S	-	S	M	S	M	S	S	S	M	S	S	\$40,000	Minor	Minor
S	S	S	S	M	-	S	S	S	M	S	S	M	S	M	S	\$100,000	Sig.-Minor	Sig.-Minor
S	-	-	S	-	-	M	-	S	M	-	M	M	S	-	-	\$55-80,000	Sig.	-

LETTER ON THE ACQUISITION OF DEVELOPMENT RIGHTS

Prepared by  
Real Estate Services Division  
Department of General Services

February 9, 1976

DEPARTMENT OF GENERAL SERVICES  
REAL ESTATE SERVICES DIVISION650 Howe Avenue  
Sacramento, CA 95825  
(916) 445-0160

February 9, 1976

Mr. Donald W. Benedict  
Principal Program Analyst  
Legislative Budget Committee  
925 "L" Street  
Sacramento, CA 95814

Dear Mr. Benedict:

At your request we have evaluated the relative merits of purchasing scenic easements and/or development rights in conjunction with "fee" acquisitions as proposed by the Coastal Plan submitted to the Legislature. The purpose, presumably, for acquiring less than fee title is to reduce the cost of implementing the Coastal Plan, and to ameliorate the impact of this program on the local tax base.

Past Experience

The National Park Service and the State of Wisconsin are the only two public agencies with any substantial experience in the use of scenic easements.

The National Park Service acquired scenic easements in conjunction with the Blue Ridge Parkway and the Natchez Trace Parkway. This experience was so unsatisfactory that only fee simple acquisitions were considered for a subsequent project, the Ozarks River National Monument. The reason given was that the previous 20 years experience with scenic easements resulted in misunderstandings between the Service and the servient land owner, administrative difficulties, difficulties in enforcing the scenic easement, and the cost of scenic easements was only a little less than fee simple.

Subsequently, the National Park Service again changed its procedure and was very successful in obtaining scenic easements over 3,000 plus acres in conjunction with Cumberland Gap National Historic Park, Harpers Ferry National Historic Battlefield Park, and the Piscataway Park opposite Mt. Vernon. By far, the bulk of these scenic easements were donations and not purchases. This leads one to the conclusion that it may be easier to obtain scenic easements by donation rather than by purchase.

February 9, 1976

The State of Wisconsin has made significant use of scenic easement acquisitions in conjunction with their highway program and, more recently, with their Resource Development and Outdoor Recreation program. Scenic easement acquisitions were acquired on the assumption that the local tax base would not be substantially reduced and the State would save a great deal of money by not purchasing the full fee simple.

Wisconsin's use of the scenic easement acquisition technique apparently went through the same administrative "growing pains" as the National Park Service. However, Wisconsin officials took cognizance of these problems and resolved them by modifying the easement documents as circumstances warranted. It appears Wisconsin is successful in acquiring scenic easements because, first of all, it is determined to do so and, secondly, because its officials have been flexible. On the average, the cost of Wisconsin's scenic easements appears to be approximately 50% of the fee simple value and condemnation was necessary in approximately 10% of the parcels acquired.

#### Definition of Rights to Be Acquired

A great deal of confusion exists in the definition and application of scenic easements and development rights. The following definitions apparently have wide use:

SCENIC EASEMENT DEFINED - "a conveyance of those ownership rights in property which will permit a public body to effectively preserve (protect or restore) the scenic beauty of the property when viewed from public lands, reserving to the grantee all other beneficial interest."<sup>1</sup>

DEVELOPMENT RIGHTS DEFINED - "a conveyance of those ownership rights in property relating to the type and density of improvements allowed by zoning ordinances and that which actually exists, reserving to the grantee all other beneficial interests."<sup>2</sup>

In researching this subject, it appears that in all practicality, both terms are synonymous. Another term, conservation easement, is in common use that overlaps in meaning the terms scenic easement and development right. From a valuation standpoint, each of these terms implies a conveyance of certain property rights. This conveyance of rights may or may not affect the "market value" of the estate involved.

In any event, assuming the proposed acquisition program is made subject to the Property Acquisition Law, the confusion in definitions will not pose a problem.

<sup>1</sup> Wisconsin Division of Highways

<sup>2</sup> Paraphrased from the Economics of Development Rights Transfer  
by: Jared B. Shlaes, M.A.I.

### Valuation

The process of determining compensation in the acquisition of scenic easements or development rights is well established through use of generally accepted principles and techniques as applied to real estate appraising. The measure of compensation for any property is the difference between the value of the property with all its rights intact as of the date of valuation and the value of the same property if limited to those uses remaining after the conveyance of the scenic easement or development right. The difference is determined by the appraisal methods used in the valuation of partial takings under eminent domain.

As indicated in the preceding paragraph, the process of determining compensation is well defined; however, the lack of comparable market data and legally established and relevant zoning ordinance and planning criteria make the task of establishing compensation more of an educated guess than an exact science. As a result, wide differences of opinion may exist as to the proper compensation due an owner for a conveyance of development rights or a scenic easement.

### Factors Influencing Compensation

One can generally assume that the owner of property affected by a conveyance of development rights or a scenic easement is entitled to compensation in proportion to the extent of those ownership rights conveyed. For example, if the conveyance of development rights prohibits all construction of allowable new improvements, the compensation may be much greater than a limited amount of allowable development that would not interfere with the objectives of the public.

The character of the property involved and its location on the north coast or south coast will be an important factor in determining if "rights" in property or fee title should be acquired. Wet lands or estuaries along the north coast may have a relatively nominal fee value while similar properties along the south coast may have a high fee value. The difference between the two areas is directly related to the demand for that type of property. In one situation, it may be reasonable to acquire the fee title while in the other situation a less costly, but satisfactory, scenic easement or development right may be logical.

Clearly, the implementations of a land acquisition program envisioned by the Coastline Commission with limited dollars must involve an analysis of each parcel of land proposed to be acquired and a determination of the extent of ownership rights required by the public. The cost of these rights can then be related to the value of the total parcel. In this way, a basis can be established for determining the best option available to the public.

### Discussion of Scenic Easements/Development Rights

To place the discussion in perspective, it is believed that some general classification system of the lands involved should be developed. It is



estimated that there could be numerous classifications and subclassifications of California coastal properties, depending upon the degree of accuracy required in estimating their potential for various uses. However, for the purposes of this discussion, it is estimated that the lands or properties can be reasonably divided into four broad classification.

These classifications are as follows:

I. Lands with little or no use or development potential.

- A. These would include swamps; lagoons, mud flats, beaches and other lands subject to tidal flooding; lands subject to flooding through action of coastal streams; land with such topography as to make it economically unfeasible to use.
  - 1. These properties would tend to show a low or nominal value in the market place.

II. Lands with strictly agricultural potential.

- A. These include those lands with a highest and best use for agriculture at present and in the foreseeable future.
  - 1. These properties would tend to reflect a maximum of \$4,000-\$6,000 per acre\* in the market place. Certain qualifications will be made with regard to this land type later on in the discussion.

III. Vacant lands with a potential higher than agriculture.

- A. These would include subdivision, planned unit development, commercial, industrial, and high potential recreational lands.
  - 1. Values would generally fall above the \$4,000-\$6,000 per acre\* range in the market place.

IV. Land that is already developed to its highest and best use.

- A. Developed to potential uses shown in Category III.
  - 1. Values would be similar in range to those indicated in Category III.

\*This range is necessarily very general and is basically for illustration purposes. Specific property values could vary widely within this range, depending upon a number of factors. However, it is not believed to be realistic to characterize very much land in the \$5,000 to \$6,000 per acre range as agricultural land.

Using the above classification system, it is then possible to analyze each general classification with consideration given to two elements believed to be most important at this time. The two elements considered will be:

1. Dollar impact.
2. Relative difficulty in facilitating acquisition.

I. Lands with Little or No Use or Development Potential

Because of their general lack of utility, properties in this general category tend to have a relatively low market value. In terms of total dollars expended, in many instances, there probably wouldn't be a great amount of difference between purchasing a partial interest (scenic easement) and the full fee interests in the land. In other instances where larger amounts of land are involved (see example below) substantial savings could probably be realized.

This agency has not had a great amount of experience in the acquisition of this type of property for park purposes. However, we have been in a position of making valuations and/or approving transactions for the Wildlife Conservation Board. One particular W.C.B. case involved the purchase of the fee of certain portions of lands around upper Tomales Bay. The properties were valued in the \$200 - \$300 per acre range for approximately 480 acres of land that was basically unusable for most purposes. Total fee value was within the range of from \$96,000 to \$144,000. It would seem logical that, if scenic easement rights could be negotiated on this land for, say, 25% of fee, then the total amount paid would be in the range of from \$24,000 to \$36,000. Such a saving, if it could be achieved, would certainly warrant the time and effort to bring the transaction to a conclusion. In other instances, the acreage involved might be too small to make a significant difference between the two types of acquisition.

As a general observation, it is believed that acquisition of scenic easements or development rights would present the fewest number of problems for this type of property. In the first place, it is believed that property owner acceptance would be greater here than on any other type of property. This would be especially true if owners were given some form of reduction in assessed valuation after transferring these rights. Secondly, there is a great incentive for property owners to transfer such partial rights to a governmental agency for preservation of certain natural elements in exchange for the approval to develop a contiguous ownership of better quality land. Third, property owners of this type of land, in this day and age of ecological movements, are less apt to regard their land as holding some great speculative potential.

In sum total, it is estimated that acquisition of scenic easements or development rights would work well with this type of property, even though, in most cases, the dollar saving to the taxpayers would be small in comparison with purchasing the full fee.

## II. Lands with Strictly Agricultural Potential

It should be pointed out that lands of this type are basically few and far between in the California coastal zone. Past experience in completing appraisals and acquisitions in every county on the coast indicates that there are very few properties in the zone that are not influenced in some way by speculation. Because of this speculative influence, the lands on the coast, with few exceptions, can no longer be regarded as strictly agricultural land. Basically, it is believed that most of the agricultural properties in this class fall somewhere in between those properties with strictly agricultural potential and those lands in Category III which already have a recognized potential for development beyond agriculture.

Because lands in this category reflect relatively high values, it is believed that if scenic easement rights or development rights can be negotiated across them, there can be a significant dollar impact in terms of actual cost savings.

A possible example of agricultural land with some speculative potential wherein a scenic easement type of acquisition could come into play are certain agricultural parcels located at the Wilder Ranch on the northerly Santa Cruz County coast (Rossi or Nolte Parcels). These parcels have a recent appraised market valuation between \$3,500 and \$4,500 per acre with total acreage of ocean front land amounting to approximately 175 acres. In general terms, the fee acquisition of these lands runs in the neighborhood of \$750,000. Certainly, if development rights or a scenic easement could be obtained at 50% or less of fee, then a large amount of acquisition funds would be saved.

However, we must keep in mind that, as we move into these agricultural type properties, the problems involved in completing the acquisition process will increase. If the property is regarded by the owner as having little in the way of speculative potential and if the owner wants to keep it that way, then acquisition will present fewer problems. If, on the other hand, the land is close to urban centers or near previous developments, the speculative potential is going to be obvious to the knowledgeable owner, and he may be very reluctant to sign away his rights to such potential for 50% or less of full fee value. There are owners of this type of land, however, who are motivated toward preserving land in its agricultural state. This motivation can be enhanced by providing a reduction in assessed valuations which would help to keep the agricultural use incentive going. It is also believed that, if this type of partial acquisition is to succeed with agricultural properties, the owner will need to retain the flexibility required to maximize his agricultural profits from the land. This means the right to change uses

or crops planted to meet changing demands or market situations. The opportunity to leave the owner with some form of partial development rights or use potential is also present to one degree or another, depending on the property involved. While there does appear to be more options with this category of property, it should be emphasized that, with each option used, new problems will arise for solution before an agreement can be reached.

By and large, it is believed that properties in this category present the best hope for achieving a workable balance between retention of highest and best use and the need to preserve desirable natural and scenic qualities. In addition, the possible dollar saving over the cost of purchasing full fee would seem to warrant the effort required to obtain scenic easements or development rights.

### III. Vacant Land with a Potential Higher than Agriculture

These lands tend to be located close to previously developed properties or on the fringe of urbanized areas along most parts of the California coast. In Southern California, they include most of the undeveloped lands within the coastal zone. However, as you move northward, they become interspersed with Category I and II lands, and they diminish in number as you move toward the Oregon border.

Because of their relatively high value, the dollar impact of obtaining a scenic easement across them at 50% or less than full fee value can be quite significant.

The Hudson property south of Carmel in Monterey County is perhaps a prime example of a property in this category. The full market value of approximately 48.8 acres, based upon staff and fee appraisals made between 1972 and 1974, ranged from \$1,750,000 to \$2,750,000; or \$35,860 to \$56,352 per acre, including the single dwelling on the property. In terms of total dollars expended, it can readily be seen that if a scenic easement could be obtained across the property at even 50% of fee value, a large dollar savings could be realized. As a practical matter though, the history of the attempts by the State to acquire this very scenic property only serves to point up the tremendous problems encountered in trying to purchase full fee interests in the parcel. It is believed that the Hudson property clearly shows what the attitude of an owner of this type of property would be if we were to approach him and offer to purchase what he regards as a high development potential at considerably less than full fee value.

Essentially, we have moved up several more steps on the relative value scale. By so doing, the potential for acquisition of partial rights in a clean and expeditious manner is further diminished.

Reduction in assessed value will hardly be an incentive to the property owner if he is asked to sign away the highest and best use for the property. While there may even be some interim use (agriculture) taking place on the property at present, income from such uses is usually only enough to pay the taxes and nothing more.

With few exceptions, it is believed that property owner incentive to encumber their properties in this category with scenic easements would be extremely low. In many instances the land owner is already moving toward the realization of his properties potential with actual expenditures of funds.

It would be most difficult to find many reasons to give up that potential for the sake of say, view preservation. The financial loss would tend to be great, and very often would come close to the full fee value of the property.

In general, it is believed that properties in this category would present the least potential for such partial acquisitions, both from a dollar impact and from a practical standpoint. With perhaps rare exceptions, the cost in time, effort and dollars would closely approximate fee acquisition. In addition, and as the example cited above (Hudson) illustrates, the property owner is able to sell this point of view in a court of law and thus obtain a maximum value award for this type of speculative coastal property.

#### IV. Land That Is Already Developed to Its Highest and Best Use

Because the value of these properties include the value of the economic improvements on them, they tend to fall into the higher valuation ranges when compared to other properties on an incremental basis. The purchase of scenic easements or development rights across this type of property is necessarily limited by the improvements on the property itself. Because of this factor, each property would generally have to be treated on an individual basis. The main emphasis here would revolve around maintaining the properties in their present state and, at the same time, an attempt would be made to insure that further development did not take away any scenic values that might remain.

If scenic easements or development rights could be purchased across properties of this type, it is certain that there could be substantial savings over the cost of full fee acquisition.

A wide variety of examples could be used to illustrate the various possibilities for acquiring scenic easements or development rights over improved properties. Undoubtedly, these examples would present an equal number of variables to be dealt with in making the acquisition. However, for purposes of this analysis, it is felt that an improved parcel proposed for acquisition at Leo Carrillo State Beach may serve as a reasonable example (Parcel 2143 - Griffin). This parcel consists of a single family residence located on a 39,000± square foot lot. The residence is so constructed on the lot that it is generally below the level of the upper portion of the lot adjacent to the existing Coast Highway grade. Because of this, the existing view from the highway is relatively unobstructed and the existing improvements are considerably less noticeable than if they had been built on the upper portions of the lot adjacent to the highway. Our most recent appraisal report indicates a highest and best use for this parcel as single family residential. The property has

been valued at \$136,000, including all improvements. Now, under the existing conditions, it is not unreasonable to assume that, if we just want to preserve the view over this property, the purchase of a scenic easement or the rights to future development on the property would cost less than a full fee purchase.

However, we must consider that logistics of making such an acquisition would be somewhat complicated. All of the ground rules would have to be pretty well defined. This is especially true with regard to what rights the property owner would retain. A reduction in assessed value would also help as an additional motivation for the property owner.

Basically, it is believed that there is a good possibility for buying these partial rights on improved properties on the California coast. However, it is believed that parcels in this category would present the greatest challenge with regard to the variety of problems presented. Therefore, each parcel would have to be analyzed on the basis of its own merits. In addition, any dollar saving under the cost of purchasing the full fee would also depend upon the individual situation and the problems involved in reaching a satisfactory settlement with the owner.

#### Conclusion

In summary, the acquisition of scenic easements - development rights would appear to be a useful technique for implementing the proposed Coastline Plan. To be effective, this technique will require a great deal of coordination and flexibility between the program planners and the valuation staff.

Acquisition of less than fee title will be most effective where there will be no public access on the servient landowner's property and where it involves wetlands, floodplains, and areas where the scenic restrictions do not interfere with the continued use of land for agricultural purposes. It may also prove to be a useful tool, even where the development potential of the land is for other than agricultural uses.

Based on the experience of the National Park Service and the State of Wisconsin, the key to the successful implementation of a scenic easement program is a strong desire to pursue this approach and a willingness to be flexible in determining those rights that are to be acquired by the public.

#### Trends in Coastal Property Value

Recent trends in real estate value for California coastal property can best be discussed in terms of property classification.

Finished lots or sites have experienced marked increases in value, particularly where Coastal Commission approval is virtually assured. It is not unusual to find increases ranging from 10-15% per annum.

February 9, 1976

There is also a strong demand for improved property, particularly single family residential. Buyers are generally willing to pay a premium to avoid the additional cost and delays inherent in securing public agency approvals. In some areas, values are increasing 15% per year.

Acreage property has shown little or no increase in value as evidenced by the marked absence of sales in this category. This situation is directly attributable to the existence of the Coastal Commission. For the most part, the Commission favors lower densities and stringent open space requirements to the extent that development becomes unfeasible.



ROBERT C. BIETZ  
Senior Land Agent



J. R. CRONE  
Senior Land Agent

RCB:JRC:wp:RE-16

LETTER CONCERNING THE DOCTRINE OF INVERSE CONDEMNATION

Prepared by  
Office of the Attorney General

December 29, 1975





OFFICE OF THE ATTORNEY GENERAL

**Department of Justice**

STATE BUILDING, SAN FRANCISCO 94102

(415) 557-0285

December 29, 1975

Mr. A. Alan Post  
Legislative Analyst  
Joint Legislative Budget Committee  
California Legislature  
925 L Street, Suite 650  
Sacramento, California 95814

Re: Senate Resolution 41

Dear Mr. Post:

By letter of November 25, 1975, you requested our advice regarding case law under the Coastal Zone Conservation Act which may affect the costs of implementing the Coastal Zone Conservation Plan. As we understand the request, it seeks advice primarily concerning the doctrine of inverse condemnation, and the effect of that doctrine as it may be applied either to the Coastal Plan or to its enabling legislation.

I

The Fourteenth Amendment to the Federal Constitution provides that no state may deprive a person of his property without due process of law; the California Constitution, Article I, section 19, somewhat similarly provides that private property may be taken for public use only when just compensation is paid. Both together and separately, these constitutional provisions provide the basis for the doctrine of inverse condemnation.

Inverse condemnation is, generally, the remedy by which a property owner may assert a claim for compensation on the ground that governmental action has constituted a taking of his property for public use. The doctrine thus provides a basis on which a property owner may institute judicial proceedings in order to obtain the benefit of a constitutional guarantee. In large part, inverse condemnation actions brought by a property owner and eminent domain actions brought by a governmental agency are different means to reach the same constitutionally required end. As the California

Supreme Court has indicated: "The principles which affect the parties' rights in an inverse condemnation suit are the same as those in an eminent domain action." Breidert v. Southern Pacific Company, 61 Cal.2d 659, 663 n. 1 (1964).

For purposes of this analysis, we set to one side those instances in which unintended physical damage is caused to property by a public undertaking which otherwise would be well within the powers of government; those cases have not arisen under the Coastal Act, and they are likely to be of little concern in implementation of the Coastal Plan. To the extent that they might arise, they will occur as a result of physical actions taken by state agencies, perhaps in constructing and maintaining and operating park facilities. However, we have no basis for predicting the frequency of their occurrence, or the potential cost therefrom. We also set to one side those cases in which a landowner claims some form of intangible detriment resulting from the construction of public improvements; those cases likewise have not arisen under the Coastal Act, and are likely to be of little concern in implementation of the Coastal Plan. To the extent that such cases arise, they too will occur as a result of physical construction undertaken by state agencies, perhaps in the construction of transportation facilities to allow full access to coastal areas. Cf. Bacich v. Board of Control, 23 Cal.2d 343 (1943). We similarly have no basis for predicting the frequency of such cases, or their potential fiscal impact.

Of more pertinent concern are those cases in which a landowner claims that landuse regulations imposed by a governmental agency so restrict his use of the property that they constitute a deprivation of the property, or a use of the property by the public. Those cases have arisen under the Coastal Act, and will undoubtedly arise under the Coastal Plan. For the reasons expressed below, however, we are of the opinion that such cases will not result in judgments against the state, and thus will not result in an economic cost to the state.

## II

Case law dealing with inverse condemnation as a result of regulatory activities under the Coastal Act is not particularly pertinent to regulation under the Coastal Plan, because of the interim nature of the Coastal Act. As you will recall, the Act will expire on January 1, 1977 (Public Resources Code, §27650), and the permit requirements of the act will thereafter be of no force or effect.

In CEED v. California Coastal Zone Conservation Commission, 43 Cal.App.3d 306 (1974), the Court of Appeal rejected a claim that the provisions of the Act on their face constituted an unlawful taking of private property for public use without

compensation. The Court, relying on a prior Supreme Court decision which we discuss below, concluded that the claim was without merit, because of the interim nature of the permit requirements. The Court recognized, as have numerous other courts in analogous circumstances (see, e.g., Candlestick Properties, v. San Francisco Bay Conservation etc. Com., 11 Cal.App.3d 557 (1970), and Hunter v. Adams, 180 Cal.App.2d 511 (1958), that a temporary restriction on the use of property pending the adoption of a comprehensive plan involving the property so restricted does not compel compensation.

In State of California v. Superior Court, 12 Cal.3d 237 (1974), our high court reached a similar result. There, the Coastal Commission denied a permit to a developer for a proposed project on its lands; the developer subsequently filed an action asserting that the Commission had denied the permit so that "its land would remain undeveloped and devoted to, and held for, public use as open space", and that the denial of the permit on that ground accordingly constituted a taking of its property. The Supreme Court rejected the argument, concluding that a temporary statute designed essentially to preserve the status quo pending adoption of a comprehensive plan did not amount to a constitutional deprivation of property.

### III

Because of the particular interim nature of the Coastal Act, the cases dealing with inverse condemnation under it thus are not of great guidance in resolving similar questions under the Coastal Plan. A more recent Supreme Court decision, however, is highly instructive as to the result which would occur under a permanent regulatory scheme.

In HFH Ltd. v. Superior Court, 15 Cal. 3d 508 (1975), the City of Cerritos had changed the zoning of a parcel of land from commercial to residential. The landowner had purchased the land when it was regulated by the commercial designation and had anticipated developing it for commercial purposes. After the "downzoning" by the City, the landowner filed an action in part in inverse condemnation, seeking compensation for the decline in market value caused by the regulatory action of the City; the allegations of the complaint asserted that the land was valued at \$400,000 under the commercial designation, was "useless" for single family residential purposes, and was valued at only \$75,000 under the residential designation.

The Supreme Court rejected the claim of inverse condemnation holding:

"...[A] zoning action which merely decreases the market value of property does not violate the constitu-

tional provisions forbidding uncompensated taking or damaging . . . ."

As a result of this decision, we do not believe that actions challenging regulation under the Coastal Plan on the sole basis of a diminution of market value will be successful.

A second aspect of the Supreme Court's holding is also of significance. The Court indicated not only that compensation is not available to an owner whose property has decreased in value as a result of a landuse regulation, but also that the remedy of inverse condemnation is not available to a landowner who challenges the validity of a landuse regulation. This distinction is of considerable import, since the Court's opinion indicates that even were a regulatory activity to amount to an unconstitutional action by a governmental agency, the appropriate means by which to remedy that action is invalidation of the governmental action, rather than judicially forced compensation.

In reaching this latter conclusion, the Court relied upon Selby Realty Co. v. City of San Buenaventura, 10 Cal.3d 110 (1973). The Court there held that a landowner could not utilize the remedy of inverse condemnation to challenge a zoning ordinance which required him to dedicate a portion of his land to the city as a condition to receiving a building permit. As the Court stated:

"The sixth cause of action sounds in inverse condemnation and alleges that the city has 'taken' plaintiff's property without compensation. . . . The appropriate method by which to consider such a claim is by a proceeding in mandamus under section 1094.5 of the Code of Civil Procedure." 10 Cal.3d at p. 127-128.

Similar results have been reached recently by other courts. See, e.g., Union Oil Co. v. Morton, 512 F.2d 743 (9th Cir. 1974) [suspension of oil drilling leases in order to protect environment]; Gaebel v. Thornbury Township, 303 A.2d 57 (Penn. 1973) [down-zoning]; Mailman Development Corp. v. City of Hollywood, 286 So. 2d 614 (Fla. 1974) [downzoning].

There is one further point in the HFH opinion which merits discussion. The Court explicitly noted that its decision did not decide the question of entitlement to compensation in the event a landuse regulation prohibited substantially all use of the land in question. Despite this caveat, however, we do not believe the point to be of substantial concern.

First, the discussion above concerning the proper remedy of a landowner is equally applicable to a regulation which

prohibits substantially all use of land; in such instances, the likely response of the courts would be to invalidate the regulation, rather than to require compensation. Second, there are few, if any, instances in which a regulation actually prohibits all substantial use of land; even the most stringent regulations which have been considered by the California courts have allowed some form of reasonable use of land. See, e.g., McCarthy v. Manhattan Beach, 41 Cal.2d 879 (1953). In fact, we are not aware of any reported California appellate case which upholds a claim of constitutionally compelled compensation as against a landuse regulation. As one recent study has put it, "[t]he 'myth' of the taking clause has always lured landowners to expect more from it than prior precedents really justify." Bosselman, Callies and Banta (Council on Environmental Quality, 1973), The Taking Issue. Finally, those instances, if any there be, in which the regulation effectively precludes substantially all use of land will most likely be those in which a significant environmental aspect is present. In those instances, the current trend of case law is to sustain such regulation, against claims of inverse condemnation. See, e.g., Just v. Marinette County, 201 N. W. 2d 761 (Wisconsin, 1972) (regulation of wetlands limiting use of property to its natural use); Sibson v. State, 336 A. 2d 239 (New Hampshire 1975) (regulation of saltmarsh, and denial of permit to alter and fill). Indeed, one California court has already noted that landuse regulation designed to "control or prevent uses harmful to the environment or to the natural resources of the state" stands on a different constitutional footing than traditional zoning regulations. CEED v. California Coastal Zone Conservation Commission, supra, 43 Cal.App.3d 306, 313.

As a result of these and similar cases, we believe that the following results will occur under the Coastal Plan. First, any regulation of the Plan which results in even a substantial diminution of property value will not result in inverse condemnation and liability to the state. Second, even as to actions which concern arbitrary regulatory action or as to regulations which exceed the constitutional powers of the state, the courts will simply invalidate the regulation as it applies to the affected property, rather than requiring the state to tender compensation. Accordingly, we do not believe that the doctrine of inverse condemnation, insofar as that doctrine is applied to landuse regulation under the Coastal Plan, will result in increased costs to the state.

#### IV

There are two further classes of cases which, depending upon future actions undertaken by the Coastal Commissions, could result in some fiscal liability to the state. The first concerns cases which challenge inequitable public actions, including landuse regulations, which are designed to result in a decrease in the value of property, prior to its purchase by a public agency. The second concerns landuse regulation designed to evade the requirement that land actually used by the public must be acquired in eminent domain proceedings.

There are California cases supporting a remedy in inverse condemnation under such circumstances; these involve damages caused by undue delay after a condemnation announcement (Klopping v. Whittier, 8 Cal.3d 39 (1972)), inequitable landuse restrictions designed to lessen the value of property which the government intended to condemn (Peacock v. County of Sacramento, 271 Cal.App.2d 845 (1969)), and a zoning ordinance enacted to allow actual public use of a landowner's property. Sneed v. County of Riverside, 218 Cal.App.2d 205 (1963). In HFH, Ltd. v. Superior Court, *supra*, 15 Cal.2d 508, the Court recognized that these circumstances could properly give rise to inverse condemnation.

We are not aware of any provisions in either the Coastal Plan or the proposed coastal legislation which would allow a landowner to claim inverse condemnation under the theories of these cases. Again, we cannot state that legal actions based on these cases will not be filed, but we do believe that any such actions will not be successful. Insofar as these cases might support a landowner, they would first require inequitable action taken by the Coastal Commission or a successor agency under the legislation and Coastal Plan adopted by the Legislature; we shall continue to work with any such agency to ensure that such a result does not occur.

#### CONCLUSION

For each of the above reasons, we are of the opinion that inverse condemnation actions based on regulation under the Coastal Plan and coastal legislation will not result in a fiscal impact on the State of California. To the extent that any such impact does occur, it will be the result only of the costs incurred by this office in defending any such actions.

If there is any further assistance which we can provide, please do not hesitate to contact us.

Very truly yours,

EVELLE J. YOUNGER  
Attorney General

*Carl Boronkay*  
CARL BORONKAY  
Assistant Attorney General

*Richard C. Jacobs*  
RICHARD C. JACOBS  
Deputy Attorney General

Supporting Document F

ANALYSIS BY STATE AGENCIES  
OF INDIVIDUAL COASTAL PLAN POLICIES

Compiled by  
Legislative Analyst

March 1976

Analysis by State Agencies  
of Individual Coastal Plan Policies

Compiled by  
Legislative Analyst

Part II of the Coastal Plan as published on December 1, 1975 contains 162 policies which form the basis for the proposed management of coastal resources. A large number of these policies propose new, revised or expanded programs or work for the existing departments, boards and commissions of state government. With the cooperation of the Administration, many of these departments, boards and commissions were asked to provide information for purposes of the SR 41 study on the effect these policies would have on them. Specifically, the agencies were asked to estimate the increment of costs over their present activities which the individual policies propose and to describe any benefits.

An incremental approach was necessary because the various policies propose a wide variety of new or changed activities. The responses became so complex, however, that extensive simplification of the analytical approach became urgent. Accordingly, in such areas as housing and industrial development, data was not collected because initial inquiries indicated that existing state agencies did not have the ability to estimate these policies in the form expressed. In addition, where agency responses indicated no cost or savings or where the policy was in the nature of a "truism" or vague or not otherwise subject to analysis, the policy was not included in this analysis. Finally, if the policy was found to be essentially statewide or national in its application, it was not included because the policy was not basically a coastline issue.



The departments, boards and commissions of the Resources Agency have indicated for each of those plan policies that affect their responsibilities, (1) whether the policy has federal, state, state mandated costs, local costs, or private sector impact, (2) the increment of costs or savings and nature of economic effects and (3) benefits, disadvantages and comments pertaining to the policies.

The responses of the individual departments, boards and commissions have been integrated in the attached material. The material is intended for use as a reference or information document. It is essentially resources oriented. In some cases the material from the agencies has been condensed but a special effort was made not to change the meaning of any response.

The brief title of the policy is shown by the number assigned to it in the plan. (Further description of the policy must be secured from the plan itself). In many instances a policy has subparts which are labeled alphabetically as in the plan. These also are shown. The individual responses follow and are shown by abbreviation of agency titles.

It was hoped that sufficient similarity of responses in the "Increment of Cost" column could be secured to permit summarizing the material into some more useful form. However, the wide scope of the policies, the differences in planning and analytical capabilities precluded developing sufficient similarity in the responses to permit direct summarizing.

Several comments will assist in the use of the material. In only a few instances was it possible to estimate costs or impacts in dollars and approximations were therefore used. Where the terms "minor,"

"significant" or "major" costs are used, the appropriate context is the size of the existing program which is addressed by the policy and not an arbitrary value that applies to all programs. Responses where possible show policies which are judged to be labor intensive, capital intensive, long or short-term, growth retarding, or energy intensive. This was done because these terms are indicators of economic impacts (and in some respects benefits) of the policies. Note that the State Lands Commission may approach a policy with respect to the tide and submerged lands under its jurisdiction while the Department of Conservation may consider private range, brush or timber lands. Each department, board or commission has used its own perspective in responding. Each agency was asked to provide the information on an objective basis without regard to whether the agency agreed or disagreed with the policy.

Several observations can be made regarding the material:

1. The costs are high and the benefits are large. This should be expected because of the scope of the policies and their stringency. Note in particular that the high costs estimated by the State Water Resources Control Board must be limited by the premises stated by the board.

2. The state mandated local costs (SB 90) can become an important consideration, particularly where an existing regulatory agency such as the State Water Resources Control Board antedates or is exempt from the requirements for state payment of local mandated costs and a new coastal regulatory agency would likely not be exempt.

3. Where a policy has the prospect of duplicating work among several state agencies, or it is not clear how the work would be performed

by individual departments, boards or commissions, that condition tends to be indicated by the number and type of responses made by the individual agencies. (See for example, policy 22).

4. The material in the responses primarily covers governmental costs. Note, however, the frequency that "private sector impact" has been checked even though there is not much information available on the extent or nature of the impact. For this reason, much of the material prepared by the consultants' studies approaches the policies from the perspective of the private sector. This was done in an effort to consider both the governmental and private sector impacts.

The following abbreviations have been used:

DC - Department of Conservation

DFG - Department of Fish and Game

DNOD - Department of Navigation and Ocean Development

DPR - Department of Parks and Recreation

DWR - Department of Water Resources

ERCDC - Energy Resources Conservation and Development Commission

SLC - State Lands Commission

SWRCB - State Water Resources Control Board

# ANALYSIS OF COASTAL PLAN POLICIES

Page 1

Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
3a Effective marine resource management Department of Fish and Game (DFG)		X				Major annual cost to DFG from F & G Preservation Fund and General Fund. Resource conserving.	Labor intensive if DFG were provided more funds to more properly manage the state's marine resources. Increase private investment if the department were provided additional funds and manpower to better manage the state's marine resources which in turn would attract private investment in harvesting the resources. Policy would help the department. However, a disadvantage would be that the department and the Coastal Commission would have to come to an agreement over performance objectives. This could be a hindrance to the department's operations. Reference to a commercial fishing academy is vague and does not take into account the existence of Humboldt State University's fishery program nor the past programs of the state's university and community colleges.
4. Criteria for aquaculture (DFG)		X				Unknown capital or annual costs. However, depending upon interpretation, we see expenditures of about \$600,000 for research from F & G Preservation Fund.	Policy would put undue strain on DFG funds if the department is required to expand its mariculture operations. Alternative sources of funds should be provided to accommodate the expansion. Labor intensive, increases private investment, resource conserving. Advantage of policy is that it could make the department's mariculture operations better known which could result in additional funding if needed. Stimulates development of mariculture operations. Cost estimate based upon research and lab facility construction.

# ANALYSIS OF COASTAL PLAN POLICIES

Page 2

Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
4. (cont.) State Water Resources Control Board (SWRCB)	X	X				Minor recurring federal and state cost in administration and monitoring of aquaculture waste discharge.	SWRCB currently has no policy on aquaculture.
5a Reserve adequate space for commercial fishing facilities DFG		X		X		Unknown capital or annual costs.	Labor and capital intensive. Advantage would be to ensure that the commercial fishing industry has adequate facilities for effective operation.
Department of Navigation & Ocean Development (DNOD)		X		X	X	Major depressant to growth of recreational boating industry. Restricts potential for increased property tax revenue to local govt.	Labor and capital intensive. Advantage of policy is that commercial fishing interests generally have been ignored in favor of pleasure craft. Commercial fishing industry is a coastal dependent industry and needs the proposed protec- tion. Protects commercial fishermen. Requires revision of local general harbor plans.
5b Allow for needed commercial fishing facilities DFG		X		X		Unknown annual costs. Policy too vague. Increases public or private investment.	
6 Expand ocean water quality research and regulatory program DFG		X				Minor unknown costs to DFG. Resource conserving.	Provides added protection to marine resources. Will help department protect the state's fish and wildlife and their habitat. Will add emphasis to need to protect living marine resources from the adverse effects of waste discharges. Re- quires SWRCB to be more cognizant of fish and wildlife protection.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
6. (cont.) SMRCB	X	X	X	X	X	Significant increased recurring costs to federal, state, and local government and the private sector. The determination of whether any of the increased costs to local government are "state mandated costs" is difficult to make in the present context. (See footnote #1).	Minor benefit from additional ocean water quality research and regulatory activity beyond existing state programs.
7. Maintain, manage and restore ocean water quality SMRCB	X	X		X		<p>Approximately \$348 million in additional capital costs and approximately \$75 million in additional annual maintenance and operation costs for municipal wastewater facilities in the Coastal Resource Management Area. If these increased capital costs were considered grant eligible under federal law and regulations and state law and regulations, these capital costs would be allocated approximately as follows: Federal - 75%; State - 12.5%; Local - 12.5%. If, however, these increased capital costs were not grant eligible under either federal or state law, then the local government would be financially responsible for these costs. At this time it is impossible to determine whether these costs would be eligible. Annual maintenance and operation costs would be financed solely by local government.</p>	<p>The SMRCB would be required to set waste discharge standards appropriate to assure compliance with the objectives of maintaining, managing, and where necessary, restoring "the natural quality of ocean water appropriate to the maintenance of optimum populations of marine organisms and for the protection of public health ...". Although the SMRCB is authorized to use either EPA or SMRCB standards (whichever are more stringent), those standards would be considered a minimum requirement. The authority for the SMRCB to set more rigorous standards is explicit in the policy. Implicit, however, is the Coastal Agency's authority to require more rigorous standards than the SMRCB deems appropriate for achieving the policy's objectives. Even if the authority to fix standards were to remain with the SMRCB, the Coastal Agency could, in actuality, impose stricter standards by virtue of its authority to "... approve, modify or disapprove development proposals and plans... to assure that the objectives of this policy</p>

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
7. SWRCB (cont.)							will not be frustrated...." The vagueness of policy terms such as "natural quality" and "optimum populations" assure that many differences will occur between agency interpretations of what standards, and hence what levels of wastewater treatment, are necessary for achieving the stated objectives. The estimated additional costs that could result from this policy were derived by extrapolation to all coastal municipal wastewater treatment plants of an actual case example-one in which the Coastal Commission required treatment beyond conventional secondary for a southern California plant to effect a reduction in effluent nitrogen (ammonia-nitrogen) which, in the Commission's opinion (not in the SWRCB's), was necessary to protect marine life.
7c. Require adequate treatment for new or enlarged discharges to other coastal waters SWRCB	X	X		X	X	Major capital costs to federal, state and local government, and private sector. For details, see Policy 7 statement.	See Policy 7 "Benefits ..." statement.
7e. Restrict expansion of sub-standard sewage systems SWRCB						No incremental costs.	Minor incremental benefits. Policy would assist the state board in controlling proposed developments and plans which could impact adversely on water quality.
7f. Require source control SWRCB						No incremental costs.	Minor incremental benefits. Policy would assist the state board in controlling proposed developments and plans which could impact adversely on water quality.

Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man-	Local	Private Sector		
8. Stress reclamation of waste-water SWRCB	X	X		X	X	<p>Major capital and recurring costs to federal, state and local government and private sector. The following examples illustrate the potential economic impact on municipal wastewater systems if implementation resulted in a mandate for wastewater reclamation in the Coastal Resource Management Area.</p> <p>1. City of San Diego: Additional capital costs up to \$49 million. Additional annual maintenance and operation costs up to \$3,300,000.</p> <p>2. City of Los Angeles: Additional capital costs up to \$78 million. Additional annual maintenance and operation costs up to \$5,280,000.</p> <p>3. Los Angeles County (County Sanitation Districts of Los Angeles County): Additional capital costs up to \$200 million. Additional annual maintenance and operation costs up to \$15 million.</p> <p>4. City and County of San Francisco: Additional capital costs up to \$29 million. Additional annual maintenance and operation costs up to \$2 million.</p> <p>These costs do <u>not</u> include those for necessary delivery systems to distribute reclaimed water to actual users where users can be found. It is probable that beneficial uses exist or could be developed for only a limited amount of reclaimed water generated. Capital costs would be allocated approximately as follows: Federal - 75%; State - 12.5%; Local - 12.5%. Annual maintenance and operation costs would be financed solely from local sources. The capital costs may not be grant eligible (See Footnote #2)</p>	<p>Benefits from conservation of the state's limited freshwater resource. See "Increment of costs" column for disadvantages.</p>



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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
8. DMR (Department of Water Resources)		X		X	X	\$50,000/yr above ongoing program, resource conserving impact. Additional local and private sector construction cost for wastewater reclamation facilities. Increase public and private investment if they are required to reclaim their wastewater.	Protects estuaries, reduces need for imported water. Assumed DMR is a cooperator with SWRCB, Public Health and local agencies in an augmented program.
10. Avoid adverse effects of thermal discharge and entrainment SWRCB						Because the magnitude of the restoration program is not specified, additional costs could range from minor to major. Costs incurred by federal, state and local government, and by the private sector.	Minor incremental benefits. Present plans and programs are adequate.
Energy Resources Conservation & Development Commission (ERCDC)	X	X		X		Substantial increased costs to utility companies. Slight increase for commission to determine conformance - \$6,250.	The economic considerations of any one policy needs to be considered in relation to various benefits and tradeoffs
10a Criteria for permitting thermal discharges SWRCB		X			X	Major capital costs to private sector. These costs might exceed the benefits.	Present plans and programs are adequate.
10b Prohibit all harmful discharges into areas of special biologic importance SWRCB	X	X		X	X	Additional costs could range from minor to significant depending on magnitude of prohibition program. The costs would be incurred by whomever was subject to the prohibition ruling, i.e., federal, state, and/or local government, and/or the private sector.	Minor to significant incremental benefits in areas of special biological importance which are not already so protected.
10c Study marine system at future sites of seawater using industrial or power plants DFG					X	No costs to DFG. Resource conserving. Labor and capital intensive.	Protects marine resources by providing background information. DFG could be contracted as an independent marine expert. Disadvantage is that the developer would be prohibited from conducting his own baseline studies or from hiring competent consultants to provide the information. Developer should have prerogative to make this choice as long as the "baseline" studies are carried out in a manner acceptable to DFG & SWRCB.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
11. Prevent release of oil and toxic substances by strict regulation State Lands Commission (SLC)		X				Added annual cost of \$50,000 - \$100,000 if SLC given major authority.	Bulk of work already underway.
11a Site, design and operate pe- troleum facilities to pre- vent adverse impacts DFG		X			X	Minor annual cost to DFG. Resource con- serving.	Protects living marine resources from oil spills. Adds emphasis to need to protect fish and wildlife habitat. However, the provisions of CEQA probably could attain the same results.
11b Research and regulation en- forcement. DFG		X				Major unknown annual costs to DFG. Resource conserving.	Protects marine resources habitat that could be destroyed through spills of oil and hazardous materials. If DFG given responsibility for this policy, it would be a tremendous undertaking. Vagueness of policy prohibits a meaningful evalua- tion of costs. Fish and Game Preserva- tion Fund monies should not be utilized for this effort.
SMRCB	X	X		X	X	Significant recurring costs to public and private sectors for research and regulation enforcement.	Due to funding constraints, this policy is not being fully implemented. More research is needed on the impact of heavy metals on the marine environment.
12. Enact state oil spill lia- bility measures SLC		X			X	State - minor recurring cost. Industry - \$100 million one time, plus incremental offsets as needed.	

Policies	Location of Impact				Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local Private		
14. Control runoff that degrades coastal waters. Department of Conservation (D.C.) (Includes policies 14a, b & c)	X	X	X	X	Minor capital and annual state cost. Significant capital and annual state mandated local and private sector costs. Principal costs will be to implement measures to protect against pollution and erosion. Amount and source of funding unknown. Policy will be growth retarding and resource and land conserving in coastal watersheds, but the reverse elsewhere. Overall economic effects will probably balance. Effect on private sector will depend on severity of restrictions placed on builders by ordinances; cost probably will be passed on to consumer.	Policy will protect marine resources, estuaries, agricultural lands, shoreline, wildlife, coastal lowlands, and design quality. Additional costs will be incurred to control pollution and runoff and for necessary land use adjustments and regulatory programs on forest and watershed lands, as well as urban and agricultural lands. Policy overlaps the authority of the Board of Forestry in the area of forest practice regulation and Chapter 70 of Uniform Building Code. A state or local regulatory program to control coastal erosion and pollution would probably cost about the same as the present forest practice program (\$2 million/year). See also Urban Geology Master Plan for costs to private sector
SLC		X		X	Minor state costs. Local cost undetermined.	Major impact point - local.
SMRCB				X	Significant incremental recurring costs to the private sectors.	Policy would assist the board in protecting the state's waters from oil and toxic spills or discharges. Policy would provide financial disincentives for irresponsible actions by an operator and provide a fund to clean up any spills or discharges that might occur.

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Policies	Location of Impact				Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private	
14b Treat polluted and contaminated runoff at source SWRCB	X	X		X	X	Minor incremental benefits insofar as additional pretreatment of polluted and contaminated runoff would reduce the need for additional treatment of receiving waters.
14c Adopt ordinances to control runoff, erosion and silt. DFG		X				Protects estuaries. Protects anadromous fish streams. Vagueness of policy prohibits meaningful cost evaluation.
15. Give special protection to estuaries and wetlands S.L.C. D.C.	X	X		X	X	Minor recurring costs for stormwater runoff monitoring to both the public and private sectors.  Minor unknown annual cost to DFG. Resource conserving.  \$50,000 per year.  Federal, state, local and private sector costs would be minor. Program could be accomplished by shifting priorities and grants from federal government.
DNOD (See policy #5)						
15a Restrict new development in wetlands SWRCB	X	X		X	X	There are 46 existing and 26 proposed treatment facilities within the Coastal Resources Management Area (not including 1976-77 Project List). The total grant cost for modification of existing facilities and construction of proposed new facilities is about \$1.2 billion. Conceivably, this policy could increase substantially the construction costs of these facilities as indicated below:  Policy could result in significant increases in capital costs if treatment facilities proposed for construction in or near existing or restorable wetlands must be built instead in areas far removed from the most economical locations.

Policy would be extremely beneficial because it would provide greater protection than presently exists for the state's valuable and limited wetland resources.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
15a SWRCB (cont.)						<p>If replacement areas must be provided for those lands diked or filled for construction of treatment facilities or if an in-lieu fee sufficient to provide an equivalent area is assessed, the capital costs would be increased.</p> <p>Increase in cost due to longer pipelines.</p> <p>Higher land acquisition costs.</p> <p>Policy would be growth reducing and ultimately population stabilizing.</p> <p>Unknown capital or annual costs. Resource conserving.</p>	
DFG		X		X			<p>Protects coastal wetlands. Because coastal wetlands are scarce and extremely valuable to numerous fish and wildlife resources, including rare or endangered species, it is of great advantage that the policy is included in the plan. Vagueness of policy prohibits sound economic analysis.</p>
15a(4) Restriction on energy facilities development in wetlands ERCDC					X	<p>May be slight increase to utility companies. Minimal fiscal impact on commission. \$12,500 (.5 man years per year) per siting.</p>	<p>Does not sound unreasonable but ERCDC should make decision and not be limited in terms of siting.</p>
15b Restore degraded wetlands SWRCB (Same analysis as policy 15a)		X					

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Policies	Location of Impact				Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector	
15b DFG		X		X		Protects estuaries. If DFG must become actively involved, then a major expenditure of Fish and Game Preservation Fund monies will be required. The policy is unclear in this regard. See policy 15a for advantage of policy.
15c Prepare and implement comprehensive estuarine plans SWRCB	X	X		X	X	Policy would assist the board by ensuring that proposed projects within wetlands and estuarine areas give adequate consideration to environmental impacts, including water quality.
DFG		X		X		Protects coastal wetlands. See policy 15a for advantages. Vagueness of policy prohibits meaningful cost evaluation.
Department of Parks and Recreation (DPR)		X		X		DPR would not participate except on individual projects.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
16. Protect other coastal waters by limiting dredging, diking and filling SWRCB	X	X		X	X	Significant additional capital costs to federal, state and local government and to private sector. These costs would arise because the policy might require the use of more expensive sites for building structures than otherwise would have been built on filled land or within diked areas.	Significant benefits would accrue because this policy would provide greater protection than presently exists for coastal waters.
SLC		X				Minimal state cost.	
17. Require replacement areas for diked or filled areas	X	X			X	Significant capital costs to federal, state and local government, and to the private sector with most of the costs being borne by the local and private sector. With regard to the Federal and State Clean Water Grant Program, see general comments in Policy 15a which relates to the number of existing and proposed wastewater treatment facilities within the Coastal Resource Management Area and the cost of upgrading present treatment facilities and the cost of construction of proposed facilities. If replacement areas must be provided for those lands diked or filled for construction of treatment facilities or if an in-lieu fee sufficient to provide an equivalent area is assessed, the capital costs for such construction would be significantly increased. Essentially, the policy might dictate double land acquisition.	Major benefits from providing greater protection than presently exists for the state's wetland resources.
SLC					X	Private costs for restoration sites undeterminable.	

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
17. (cont.)  DFG		X		X	X	Unknown capital and annual DFG costs. Re-source conserving. Displaces local taxes.	Protects coastal wetlands. Cost evaluation not feasible because of vagueness. Advantage to fish and wildlife resources because it would replace valuable wetlands that would be destroyed by development. The operating and maintenance costs could be significant if the in-lieu fees were turned over to DFG for purchase of land.
18. Regulate permitted dredging  SWRCB	X	X		X	X	Significant recurring costs to federal, state, and local government and to the private sec-tors. These costs would be associated with beach replenishment activity, with a substan-tial portion of the expense resulting from the energy intensive act of transporting dredged sediments to appropriate disposal sites	Minor incremental benefits in maintain-ing beaches in this manner.
19. Criteria for seawalls, breakwaters, and other shoreline structures  SWRCB	X	X		X	X	Possible significant capital costs to federal, state, and local governments and to private sector.	Significant benefits insofar as this policy would help to minimize marine water quality problems.



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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
20. Initiate positive programs to restore sand supply							
SMRCB	X	X				Significant additional recurring costs to federal and state government.	Minor incremental benefits resulting from a new program to restore sand supplies to California's beaches, but such a program would most likely be energy intensive.
SLC	X	X		X		Costs could be considerable dependent on scope of program adopted.	
DC	?	X		X		Annual state cost of \$300,000 - \$1,500,000 per year for ten years. Lead agency (state, fed- eral, local) not identified. Resource con- serving. Cost based on CIT and Scripps esti- mates for a similar smaller sediment study in Southern California. Their costs estimated at \$100,000 - \$300,000 for ten years.	Protects marine resource (mineral). Aids in erosion protection of beaches and coastal headlands. Requires time-con- suming study of large geographic area and use of specialized equipment. Diffi- cult environment for research. Policy vague as to exactly what agency would conduct research, detail of work, and expected time for completion.
DPR	X	X		X		One-half DPR Planner - \$10,000.	DPR would realize greater use of beaches for recreation.
DWR		X		X	X	DWR: \$50,000/yr. Minor local and private cost. Resource conserving.	Maintains and enhances beaches, minimize costs of groins, jetties, etc. DWR would cooperate with DNOD, Corps of Engineers, et al.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
22. Prepare and implement comprehensive watershed management plans SWRCB	X	X		X	X	Significant capital costs to federal and state government to prepare plans. Major recurring costs to federal, state and local government and to the private sector to implement the plans. Since development within the coastal resource management area must be in conformance with the comprehensive watershed management plan and since such a plan could impose additional requirements on the performance, location, design of wastewater treatment facilities, such plans could force the state board to restructure its present statewide priority for distribution of the funds available through the Federal and State Clean Water Grant Program. See also Policy 8.	The policy implies that much of the comprehensive management planning will be satisfied by the present programs of the state board under Section 201, 208, and 303(e) of the Federal Water Pollution Control Act. This implication is not completely accurate and the relationship and output of these three planning programs of the state board should be briefly explained. (See footnote #3).
DWR		X		X	X	\$100,000/yr. Major amounts of staff services to furnish local input to plans. Resource conserving and enhancement.	Protect and enhance resources for benefit of the public. Basis for control of development.
DC	X	X	X	X	X	Substantial short-term private costs will be incurred as a result of land use adjustments and mitigation of watershed damage and increased operating costs. Significant public sector costs will be incurred to plan and implement. Major costs will be incurred by the private sector in terms of opportunity costs, mitigation of watershed damage and land use adjustments.  Implementation could generate major savings in the area of watershed protection and the management and utilization of forest and rangeland resources in coastal watersheds.	Policy will protect marine resources, estuaries, forest and agricultural lands, shoreline, wildlife and design quality, and will encourage judicious use of resources and land. Policy will restrict commercial and residential development and cause land use displacement. This policy will be difficult to implement since it suggests extensive multi-agency participation through all levels of government and suggests strong land use control and regulatory authority over land management practices.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
22. DC (cont.)						<p>The watershed plans could provide the basis for land use adjustments and management practices that would reduce the cost of watershed fire protection and associated damage and rehabilitation. The potential savings to state and local government could exceed \$10 million annually. Substantial costs will be incurred in the public sector for actual watershed planning. Past experience has shown that small watershed plans involving several hundred square miles have cost several hundred thousand dollars, while large plans involving 20,000 to 30,000 square miles have cost \$1½ million to \$2 million. It is estimated that these costs will be more than offset by future savings. Policy will be growth retarding and resource and land conserving within coastal watersheds, but may stimulate growth and resource use in other areas. Policy should reduce property taxes in coastal watersheds.</p>	
22a Procedure for preparation and implementation of watershed plans DFG		X		X		<p>Significant unknown annual costs to DFG from F &amp; G Preservation Fund. Resource conserving.</p>	<p>Protects habitat of living marine resources. Advantage is that it will make the SWRCB or other lead agency more cognizant of including fish and wildlife needs in these plans. Fish and wildlife will benefit through habitat protection. Alleviates possibilities of conflicts between F &amp; G Commission, DFG rules and regulations and local rules and regulations.</p>

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
23. Relate development and water supply decisions to coastal watershed management plans D.C. (Includes policies a, b, c and d)	X	X	X	X	X	Minor annual and capital costs to state, local and private sector. State mandated costs unknown. Funding source unknown. Minor additional costs would be incurred to provide additional watershed protection, chiefly in fire protection and regulatory programs. Policy would have minor resource and land conserving impacts. If possible, would make large future savings in capital cost of water development at federal and state levels.	Some additional protection would be afforded to forest, brush and grass covered lands in coastal watersheds. Minor restrictions would be imposed with respect to land use and associated development activities. This policy could be implemented with respect to forest practice regulation and fire protection through increases in existing programs. New authorities and programs would be necessary to provide additional watershed protection on brush and grass covered lands.
DNR		X		X	X	\$200,000/yr. Local - significant amount of staff services. Private - Minor. Impact - resource conserving.	Control development. Protect surface streams and groundwater basins. DWR specified in policy 23d to take lead role in providing a coordinated program.
23a Conform water supply plans to watershed plans SWRCB	X	X		X	X	Possible major capital and/or recurring costs to federal, state, and local government and to the private sector.	If the water supply plans were used for purpose of protecting coastal resources, major benefits could accrue to the people of the State of California. Policy is growth reducing and population stabilizing.
23b Development shall not adversely affect local water resources SWRCB	X	X		X	X	Major recurring costs to federal, state, and local government and to the private sector. Significant recurring costs to local agencies that carry out flood plain zoning.	Significant benefits insofar as this policy would provide additional protection for water recharge areas. Policy is growth reducing and population stabilizing.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
23c Avoid need for future water importation. SWRCB						There would be no incremental costs.	Significant benefits insofar as this policy would encourage more prudent utilization of our natural resources. Policy is growth reducing and population stabilizing.
23d Water management shall stress conservation SWRCB	X	X		X	X	Major incremental capital costs to federal, state, and local government and to private sector.	Significant benefits. However, this policy would hinder the board's efforts to upgrade the state's water quality by placing water reclamation projects at a cost-effective advantage over similar projects inland. The resulting re- structuring of funding priorities could frustrate the state board's efforts to maintain and protect water quality in California. The situation would be aggravated if Policy 23d were applied only to the coastal zone or coastal re- source management area. On the other hand, if this policy were applied state- wide it would assist DWR in carrying out its mandate to conserve the state's freshwater resource and an affirmative program for water conservation is needed.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
24 Review major projects affecting coastal streams D.C. (Includes policies a, b, c and d)	X	X	X	X	X	Minor state cost. Significant state mandated and local level annual cost. Major cost could be incurred in the private sector to implement land use adjustments and project mitigation measures to comply with policy objectives so as to obtain permits. Policy could be growth retarding and resource and land conserving in coastal watersheds, but the reverse elsewhere. Major costs could be incurred by the private sector and significant costs to implement policy would be incurred by the public sector. However, this policy is not much stronger than present federal and state law (e.g., PL 92-500 Sec. 208, 404, etc.) under which this type of regulation may be required. Partly implemented by CEQA.	Policy will provide additional protection to marine resources, estuaries, shoreline, coastal lowlands, and design quality. If rigorously enforced, it could severely restrict commercial and residential development and greatly increase the cost of these activities. Neither benefits nor costs can be precisely quantified because they will vary in proportion to the scope of this effort. This policy extends interim permit authority of the successor coastal agency far inland. Full implementation could increase the cost of timber harvesting on several million acres of inland watersheds. Under special circumstances, large timber harvesting operations could be curtailed or prohibited. (See "economic effects".)
DNR		X				\$150,000/yr. Local - minor amount of staff time in review process. Private - minor. Impact - growth control that is in best interest of the public.	Provide basis for orderly development through projected analysis of environmental impact reports for a large number of small projects.
24a Project review procedure for major projects affecting coastal streams SHRCB	X	X		X	X	If the state and each regional board were designated as the agencies to issue the interim permits, then the administrative costs would be almost nonexistent. If, however, another state agency were required to implement a new permit program, it could result in a significant increased incremental cost.	There would not be any incremental benefits. Present programs and policies adequate.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
24a SWRCB (cont.)						Federal, state, or local government or the private sector might incur a significant capital cost resulting from the inability to use the least expensive streamside site.	
24b Criteria for projects that would alter natural streams SWRCB	X	X		X	X	Federal, state and local governments would incur significant capital costs resulting from necessary redesign of highways and roads.	Minor incremental costs.
DFG		X				Significant unknown annual savings to F & G Preservation Fund. Resource conserving.	Protects anadromous fish habitat. Could save the department a goodly sum of money by prohibiting alteration of stream channels. Presently, the department expends a great deal of effort on enforcement of Sections 1601 and 1602 of the Fish and Game Code on coastal streams alterations. A survey two years ago showed that the department expended 8 to 9 man-years of effort statewide. A major portion of this effort was conducted on coastal streams.
24c Approved projects must mitigate damage SWRCB	X	X		X	X	Significant capital costs to federal, state and local government and to the private sector as it concerns sand transport capability.	Minor incremental benefits resulting from requiring projects to be designed to maintain sand supplies to California's beaches. However, policy should only allow maintenance of sand transport when such action would not impair water quality and a demonstrated need exists for beach replenishment.

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Policies	Location of Impact				Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector	
24d Provide interim protection of sand supply SWRCB	X	X		X	X	Significant benefits from the protection of natural sand supply and transport mechanisms.
25 Provide special protection for anadromous fish streams DFG (Includes policies a & b)		X				Protects anadromous fish habitat. Policy would help to increase anadromous fish population through restoration of habitat. The added funds would help the department to conduct necessary stream surveys to identify critical spawning areas, habitats to be restored and the size of fish runs. Commercial (salmon only) and sports fishermen will benefit.
DC (Includes policies a & b)	X	X	X	X	X	This policy will protect marine resources, coastal streams, and estuaries. It may restrict commercial and residential development activities and increase operating costs in certain coastal watersheds. This policy will require additional regulation of forest practices in certain areas and could require additional regulation of certain agricultural practices.
SWRCB	X	X		X	X	There would be significant benefit in protecting this resource.



Policies	Location of Impact				Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector	
26. Preserve significant natural areas and rare species						
DFG	X				X	Protects fish and wildlife habitat and would ensure the sustenance and main- tenance of threatened living plant and animal resources.
DPR		X		X		Conservation easement could affect private sector.
D.C. (Includes policy 27, fragile habitat)	X	X	X	X	X	Policies will protect significant natural areas and rare species and indirectly pro- vide minor watershed protection benefits. Will restrict to a minor degree timber harvesting activities and certain agri- cultural practices. Policies can be implemented to a significant degree under the present authority of the Forest Practice Act on timberlands and William- son Act for scenic easements, preserves, etc. Acquisition, management and regu- latory costs based on expansion of exist- ing programs. Private sector costs based on past experience.
SLC (Includes policies 26-29 natural habitat areas)	X					Major unknown capital and annual costs from F & G Preservation Fund if DFG required to restore such areas. Significant operating and maintenance costs. Would require augmented funds from the General Fund. Resource conserva- tion. Reduces property taxes. Increases pri- vate and public investment. Displaces local tax base. Cost estimate not available be- cause policy is vague.  Costs indeterminate.
						Significant costs at the state and local levels for acquisition, maintenance and protection. Significant costs might be incurred in the private sector as a result of land use ad- justments and mitigation measures. Amount and source of funding unknown. Policies growth retarding and resource and land conserva- tion in the coastal resource management area, but may stimulate growth and resource use in adjacent areas.
						\$200,000 over two-year period. Total costs would be dependent on land purchases to be made in final acquisition list.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
27. Protect fragile habitat areas DPR		X				Cost indeterminate.	
28. Control development adjacent to significant and fragile habitat areas.  D.C. (Includes policies a, b & c)	X	X	X	X	X	Minor added cost at state level for regulatory programs. Significant public costs could be incurred at the local level for administration and regulation. Significant private sector costs as a result of land use adjustments and necessary mitigation measures. Policy resource and land conserving and minor growth retarding. These effects may be compensated elsewhere.	Policy will protect marine resources, estuaries, shoreline, wildlife, and design quality, and result in minor additional watershed protection. It will restrict certain commercial and residential development and increase public and private operating costs in limited areas. On forested areas, this policy can largely be carried out through extension of existing forest practice regulations. Williamson Act could be used.
29. Minimize habitat damage wherever development is permitted  D.C.		X		X	X	Minor increases in governmental costs. Private sector unknown.	Additional protection provided for marine resources, estuaries, shoreline, wildlife, coastal lowlands, and design quality. Minor increases in commercial and residential development and operating costs will be incurred.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
30 - 37 Basic Policy: Protect agriculture  D.C.		X	X	X	X	Significant state, local and private sector cost. Local tax losses resulting from assessment at other than market value could exceed state reimbursements under the Open Space Subvention Program (except see AB 2222). Policies could result in a significant cost to the private sector. Tax savings would result through assessing under the provisions of Art. XIII of the Constitution and Williamson Act. Policies partially funded under Provisions of Williamson Act and Open Space Subvention Act. Tax shifts would occur.	Policies will provide for the protection of agricultural, forest, brush and grass covered watershed lands from nonconforming development activities. Development could take place in less desirable areas resulting in greater costs. The Open Space Subvention Program could be increased significantly. Local losses or tax shifts could exceed state reimbursements. The extent of agricultural lands to be preserved and the extent of nonconforming uses of highly productive forest and rangelands have not been evaluated. Special consideration should be given to the maintenance of agricultural land through means other than acquisition. Economic losses may occur to forest and rangelands.
38a Protect coastal forest resources. Restrict conversion of productive timberlands  D.C.	X		X	X	X	Minor government cost. Significant private sector costs will be incurred because of land use adjustment and increased development costs. Policy growth retarding and resource and land conserving in the coastal zone, but would be offset elsewhere.	Policy will protect timberland from nonconforming uses and encourage continued production of forest products. Secondary benefits will include protection of watersheds, wildlife, downstream coastal resources and design quality. This policy could generate significant savings within the coastal zone for public services and associated costs. However, these savings will be offset since development activities and conversion will take place on adjacent or on other forest lands.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
38a D.C. (cont.)							General estimates of private sector costs are based on recent conversion practices on coastal forest lands. Legislation to clarify timberland conversion requirements desirable.
38b Protect scenic qualities of timberlands D.C.	X	X	X	X	X	Minor costs. Principal cost will be to implement measures to protect scenic quality which could involve prohibition or delay of timber harvesting in limited areas. Also, minor increases in operational costs would be involved. Significant growth retarding and resource and land conserving effects could result.	Policy will protect design quality on the coast, but will restrict timber harvesting and increase associated costs. Private sector costs will be increased to provide necessary protection of scenic qualities. Minor increases in forest practice regulatory programs at the state and local levels. Policy overlaps existing authority of the Board of Forestry in forest practice regulation. Much of this policy can be implemented through extension of this authority.
38c Protect water quality from adverse effects of logging D.C.	X	X	X	X	X	Minor government cost. Also, costs will be incurred to implement additional measures for erosion protection. Minor growth retarding and resource conserving impacts in coastal watersheds.	Protect marine resources, estuaries, shoreline, coastal lowlands, streams and design quality. It will result in minor restrictions in timber harvesting activities and minor increases in operating costs. Policy can be largely implemented through existing forest practice regulation.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
40. Protect coastal soil re- sources D.C.	X	X		X	X	Minor federal and state capital costs. Significant federal and state annual costs. Significant annual savings at local level and in private sector. Federal funds through the Soil Conservation Service are available on a cost-sharing basis. Yearly appropriations are made to the Department of Conservation for the completion of soil-vegetation surveys. Policy will provide for a knowledge of soils and land capabilities. This knowledge will enhance the economic use and development of coastal lands.	This policy will provide for information that is essential in determining land capabilities; land use planning and the protection of the soil resources. Detailed mapping of large geographic areas would be required. This mapping could be completed through participation by all levels of government, either on their own or through cost-sharing arrangements with other levels, i.e., federal and local and state. The cost of soil surveys under programs administered by the Soil Conservation Service ranges from \$0.80 to \$1.00 per acre exclusive of map compilation and the publishing of reports. The cost of soil-vegetative surveys is comparable. Much of the coastal area has been surveyed. North coast area includes mapped vegetation.
40-42 Policies on soil and mineral resources SLC						Additional costs undeterminable until inventory made. Costs of inventory depend on detail required. Probably \$100,000 to \$200,000.	
41 Regulate mining D.C.	X			X	X	\$100,000 annual state cost for surveys. Significant local and private sector cost. Increased cost to mine operator would be passed along to consumer. Resource conserving. If resource cannot be mined, local agencies could suffer tax loss, both on revenues and property.	Preserves and restricts use of mineral resources. Could contribute to more "environmentally wise" mining operations. Chapter 1131, Statutes of 1975, covers many of the same general concepts. Depending on the types of additional requirements which might be placed on mining in the coastal zone, the cost to D.C. might range from slight to great.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
42. Inventory and reserve mineral deposits D.C.			X			Depending on the manner in which implemented, and the exact provisions of Chapter 1131 costs could vary from slight to great for state, local jurisdictions and private sector. Resource conserving and may have major long-term economic savings.	Increase awareness of potential mineral resources. Protects and restricts use of mineral resources. Chapter 1131 speaks to same topic. Inventory requirements for this policy should be modified to match and make use of Chapter 1131 in order to avoid wasteful duplication of effort. Division of Oil and Gas has a program of research and development of ordinances and regulations concerning oil and gas extraction in urban areas which matches thrust of this policy.
43. Design and operate coastal developments to protect air quality ERCDC					X	Could result in substantial costs to utility companies in limiting fossil fuel site options to more distant sites. \$12,500 (.5 man years per siting).	
45. Protect the visual quality of highly scenic areas. DPR	X	X		X		Shared responsibility, Higher responsibility for DPR on existing projects.	
46-47 Establish local design procedures and standards and a design review process D.C.		X	X	X	X	Minor state and local cost. Significant increases in private sector costs of timber harvesting if the design standards require substantial changes in forest practice regulations to protect scenic resources. Policies will be growth retarding and resource consuming.	Policies will protect coastal scenic resources, but will restrict and limit timber harvesting activities. Policies can be implemented through existing forest practice regulation.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
48. Reduce litter in coastal areas DPR	X	X		X		Ongoing program for DPR.	
49. Design guidelines: compatibility with natural environment DPR	X	X		X	X	Local government will have major responsibility.	
49f, g & h & 52 Design guidelines: headlands, hillsides and canyons; upland terraces and plains; rivers & streams; landscaping D.C.	X	X	X	X	X	State cost unknown. Significant local and private sector annual cost. Possible increases in timber harvesting costs due to restriction of harvest and increased logging costs. Policies may be growth retarding and resource and land conserving in coastal watersheds, but may be offset in adjacent areas. Policy too vague to estimate benefits to protection costs.	Policies will protect coastal scenic resources, but may restrict timber production, increase fire hazard and conflict with existing fire hazard laws. Significant timber resources could be affected by these policies and prohibition or restriction of timber harvesting and increased associated operational costs might be significant. Increases in fire protection costs and potential damage are based on current experience.
50. Design guideline: protection of coastal views DPR	X	X		X	X	Additional local government controls needed.	
51. Design guideline: scale, height, materials & colors DPR	X	X		X	X	Some local governments have existing activities	
52. Design guideline: landscaping DPR	X	X		X	X		

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
53. Design guideline: alteration of natural landforms DPR (Includes policies a & b)	X	X		X	X		
53b Design guideline: restore natural contours D.C.		X	X	X	X	Minor state and local cost. Significant private sector costs to restore landscape to natural forms following timber harvesting. Growth retarding and resource conserving, but might restrict production of timber in critical areas.	Policy will protect scenic coastal resources, but will restrict commercial timber harvesting activities. Policy vague. Private sector cost is based on past experience related to timber harvesting, road construction and excavation costs and potential area affected. Only minor administrative costs were considered.
54. Design guideline: signs DPR	X	X		X	X		
55. Design guideline: utility structures DPR	X	X		X	X		
55a Avoid duplication of utility facilities ERCDC		X			X	Reduces costs. No additional costs.	Already in effect where possible.



Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
55b Undergrounding of distribution facilities ERCDC		X			X	Substantial cost to utilities. Some cost to PUC and ERCDC.	ERCDC controls transmission facilities from the plant to the grid.
55d Design of above-ground facilities ERCDC		X			X	May be substantial cost to utilities. Slight cost if any to ERCDC to evaluate conformance. \$25,000 (1 man-year per year) per siting.	
56. Design guidelines: major public service, commercial and industrial facilities					X	Increased costs to utilities. Slight increase to ERCDC to ensure conformance and full evaluation of alternatives \$2,000 (1 man-month per year) for siting.	Using the environment as the sole criteria for siting a non-water or ocean site energy facility is too narrow. Proximity to customers may reduce costs of powerplants and provide energy needed for commercial and industrial growth that would otherwise not be available.
SWRCB	X	X		X		Related to wastewater treatment facilities, the policy might result in major capital costs to federal, state and local government. Policy could affect certain grant projects where visual obtrusiveness or esthetics are major design considerations involving construction costs not normally sanctioned by the SWRCB. Possible increase in cost if underground construction or extensive screening of facilities is required.	

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man-	Local	Private Sector		
59, 61-63 Concentrate public service facilities  DWR		X		X	X	State: \$50,000/yr. Local: Some increases and decreases. Net effect on private sector unknown. Resource conserving, retains agricultural land in production and preserves open space.	Encourage land conservation in best interest of the public. DWR would provide a large amount of available data on land classification, water development and use, etc., on a cooperative effort with all concerned agencies.
61. Regulate new or expanded public service and transportation facilities  SNRCB	X	X			X	Policy would hinder the board in awarding grants for wastewater treatment and collection facilities because the determination of project consistency with other Coastal Plan policies is so vague as to result in considerable delay and confusion. Policy growth reducing and ultimately growth stabilizing.	Policy is redundant to other public service policies and should be deleted.
64. Restrict development in flood-hazard areas.  D.C. (Includes policies a, b & c)	X	X	X	X	X	Major long-term savings at all levels of the public sector may be generated through reduced damage to capital improvements and reduction in the cost of protection and services. Significant state mandated costs will be incurred at the local level to implement this policy, but these costs will be more than offset by the savings generated. Major costs will be incurred by the private sector in terms of increased cost of construction and operation. These will be more than offset by major savings generated through protection from damage and reconstruction.	This policy will protect marine resources, estuaries, forest and agricultural lands, shoreline, wildlife, and design quality, and will encourage judicious use of resources and land. Disadvantages will include restriction of commercial and residential development and land use displacements which will generate minor temporary increased demands for energy and resources. This policy was analyzed on the basis of protection from "fire-flood sequence" problems only. This policy has great potential for savings

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
64. D.C. (cont.)						Policy will be growth retarding and resource and land conserving within coastal watersheds, but may stimulate growth and resource use in adjacent areas. Policy may reduce state and local property taxes over the long term through a reduction in damage as well as the need for protection and services. This analysis addressed "fire-flood sequence" damage potential which is most serious in coastal watersheds. Even though additional development may occur in flood plains outside the coastal zone, this development would be located in areas generally less prone to "fire-flood sequence" type damage.	in terms of damage, protection and services in coastal watersheds. See Federal Flood Protection Law. Estimates of potential savings in damage and the cost of protection and services were based on general estimates of past "fire-flood sequence" damage to public and private sector improvements in coastal watersheds. In the past 5 years these costs have been several million dollars annually.
DWR	X			X	X	State: \$150,000/yr. above present program. Local and Private: Prevent future problem areas as a result of floods.	Reduce future flood damage to development in flood plains and prevent loss of life from floods. Detailed investigation would be needed to police flood plains.
65. Improve statewide geologic safety measures.							
D.C.	X		X	X	X	State annual costs could exceed \$100,000 to Division of Mines and Geology. Policy too vague to price state mandated and local cost. Savings to State of California could be in many millions of dollars as indicated by the CDMG - Urban Geology Master Plan for California analysts.	Reduction in loss of property value and life loss by avoiding geologic hazards. Cost estimate based on expenses during current geologic hazards study for counties in Central and Southern California and Alquist-Priolo zoning for geologic hazards throughout state.
SWRCB	X	X		X	X		Minor to significant benefits.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
66. Require filing of geologic hazards information D.C.		X		X	X	Minor cost to state, local and private sector. Could result in fewer losses to private sector and a reduction in lawsuits brought against public agencies. Could be growth retarding.	Data should be available to potential owners. Should lead to a reduction in property and life loss and increased public awareness. Requires centralized filing and development system for distribution of reports. Cost estimate based on current cost of filing Alquist-Priolo hazard reports. Would require legislation.
67. Review and regulate new development for geologic safety SWRCB	X	X		X	X	Minor recurring costs to federal, state and local government and to the private sector.	Significant benefits from requiring an initial geologic and soils study in coastal areas of high geologic hazards prior to the construction of structures. However, this policy is not needed as it relates to the board because the planning for wastewater facilities funded under the Clean Water Grant Program must be in accordance with the State Guidelines for Consideration of Geologic Factors in Environmental Impact Report Preparation. (Clean Water Grant Bulletin No. 28, August 8, 1975)

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
67c Review and regulate new developments for geologic safety. Division of Mines & Geology to assist. D.C.		X			X	State: Significant annual cost to review all projects. If local agencies are involved, costs to them could be significant. Minor private sector cost. Could be growth retarding but should result in long-term savings.	Quality control for geotechnical reports aids in reduction of property and life loss. Cost estimate based on those for EIR, hospital site, and Alquist-Priolo review. Cost to private sector based on cost of geologic reports presently being incurred for subdivision size projects. Cost about \$50.00 (1972) per unit of housing. Geologic report costs for individual units investigated as a result of Alquist-Priolo requirements approximately \$1 million. Policy is ambiguous as to responsibility for review and regulation.
70. Regulate bluff and cliff developments for geologic safety D.C.		X		X	X	Minor annual cost to state and private sector. Annual local cost eventually could be significant for those jurisdictions with bluff and cliff areas facing developmental pressure. Could be growth retarding. Should have long-term benefit.	Additional geologic safety. Additional cost per unit of housing or other development. Additional burden of review placed on CDMG. Ultimately should be shifted to local jurisdictions when they have developed expertise.
72. Recommendations for statewide energy conservation measures in new developments ERCDC						If Coastal Commission invoked authority to set conservation standards serious duplication of ERCDC efforts could occur with consequent increased costs to the taxpayer. Local government will need to inspect new construction for compliance. Construction will be more expensive.	ERCDC has promulgated or will promulgate conservation standards for space and water heating, certain building designs, pilot light ignition systems, and appliance efficiency standards.
74. Encourage development of alternative energy sources ERCDC	X	X			X	ERCDC is now undertaking such a program. 1975-76 state and federal budget level at about \$6.8 million. If implemented new industries will develop.	Highly beneficial for the entire state.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
75. Recommendation for implementing solar heating and cooling systems ERCDC	X	X		X	X	ERCDC is recommending to the Legislature that in the 1975-76 fiscal year the commission expend \$3.645 million (state and federal) for solar energy related projects. Many are related to solar heating and cooling. If results are fully implemented, new industries will be created and there may be increased local government inspection requirements.  Currently Jet Propulsion Laboratory is working on first phases of this activity. Projected that by July 1, 1977 ERCDC will have this activity accomplished. ERCDC will expend budgeted funds for certification process.	Generally, this policy is beneficial to the state.
75a Recommendation to determine when delivery system exists ERCDC		X				Substantial costs to the private sector. Rapid development of a new industry. Local building criteria would be revised. \$175,000 staff (9 person years) per fiscal year.	Alternatives (i.e., insulation, building design, might negate benefits.)
75b Recommendation to require alternative heating and cooling systems ERCDC		X		X	X	Substantial costs to private sector in duplicating energy systems in anticipation of technological breakthroughs. \$50,000 (2 person years) per fiscal year.	Alternatives such as better insulation and building design might be more beneficial in terms of life-cycle costs than requiring the solar alternative.
75c Recommendation to require capability to incorporate solar collector system ERCDC		X		X	X	Testing and certification would involve substantial costs, particularly if development costs are underwritten by testing facility. \$500,000 (10 person years) and \$1.2 million in consultant contracts.	This should be done.
75d Recommendation for testing & certification; retrofitting of solar heating systems; "sun rights" ordinances ERCDC		X					

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
76. Establish a statewide agency to plan and certify all energy facilities ERCDC		X				Substantial increased costs to ERCDC in developing competent staff to site facilities of different technological expertise than now exists. \$25,000 (one man-year) per notice of intent, one man-year per application. Total \$50,000 per siting. Additional costs reflected in Policies 79, 87-88, & 94.	Giving ERCDC authority over additional power related facility siting is logical. Authority should be centralized in one entity.
76-80 Energy facilities, plan & power plant siting considerations DWR	X	X		X	X	State: \$100,000/yr. Local: minor. Private cost dependent on restriction of location, design esthetics, etc. If power plants are moved inland, it would retain agricultural land in production, reduce local tax base and require greater use of fresh water for power plant cooling even with use of waste water reclamation.	Provides control over design quality of developments, esthetics, and conserves shoreline for public access. Requires development of water supply to replace sea water for cooling. Requires greater number and intensity of EIR's. DWR would be a participant with applicant, Energy Commission, Coastal Commission, et al, to furnish data and expertise for various proposals for energy facilities, i.e., sources of cooling water for inland sites.
77. Coastal agency role in siting coastal power plants ERCDC		X		X		Duplication of work most likely will occur, thus causing substantial cost increases to Coastal Commission.	
78. Coastal agency role in ongoing site identification process ERCDC		X		X		Duplication of effort will result in additional costs to Coastal Commission.	

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
79. Criteria for siting and de- sign of Coastal power plants							
ERCDC		X			X	Additional costs to the utility. Some addi- tional cost to ERCDC to provide conformance. \$75,000 (3 man-years) per notice of intent and application. Total - \$150,000 per notice of intent.	Safety and environmental protection are serious concern of ERCDC in siting power plants.
SWRCB					X	Significantly increase capital and recurring costs to the private sector to conform new or expanded powerplants to these requirements.	The policy would encourage the use of inland sites over coastal sites. Cooling water for inland plants would be supplied by fresh water, wastewaters, or natural inland brackish waters. The availability of freshwater for powerplant cooling is complicated by competing uses (municipal, industrial, and agricultural, as well as in-stream uses), projected demands with differing assumptions, anticipated water resources development, and annual hydro- logical fluctuations. However, regard- less of the variability in each one of these factors, the outlook for expanding consumption of freshwater is not good, either on a near or long-term basis. Excluding the north coast streams from further immediate considerations, in accordance with statutory mandates, California is stretching its fresh- water supply capabilities to environ- mental limits. In fact, much of the present water resources attention is devoted to resolving and mitigating the previous over-commitment of freshwater use, especially in terms of maintaining or restoring viable aquatic habitats in our streams and rivers. Further, con- sumptive use of these waters beyond existing demand projects would only delay and perhaps permanently prevent implemen- tation of these measures.



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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
80. Remove outmoded powerplants from beach areas ERCDC.					X	Some cost to utilities, but generally in conformance with current business practices.	Valuable policy.
81-86 Policies for petroleum development SLC		X				Minor new costs to SLC.	Substantial new costs for other state agencies.
82a(3) SLC must approve explora- tion program D.C.		X			X	The Division of Oil and Gas would review all drilling programs for compliance with regulations. If accelerated development of state offshore occurs, cost to the state would be \$40,000 annually for additional staff for offshore well surveillance. Private sector would be paying for additional engineers through increased assessments on oil and gas production.	
83b Assure geologic safety in siting of petroleum facilities D.C.		X			X	Three additional engineers will be required to evaluate all proposed drilling sites. Cost would be about \$60,000 per year. Private sector would pay cost through increased assessment on oil and gas production.	The Division of Oil and Gas recommends a rewording of the policy that in effect may require one engineer, rather than three. Benefits: lessen possibility of a pollu- tion incident.

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Policies	Location of Impact				Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local Private Sector		
83c Consolidate drilling, production, and processing sites D.C.				X	Small savings in consolidation of facilities.  Cost, if any, unknown. See policy 119.  Minor cost to SLC. Major cost statewide.	Benefit: maximize oil and gas production. In addition, esthetic benefits would be derived.
83e Platforms preferred over islands; minimize impact of platforms						
87. Coastal agency role in refinery siting						
SLC		X				
87-88 Siting and design of coastal refineries						
ERCDC		X		X	New costs to ERCDC in identifying list of possible sites and consequent certification. There may be a reduction in cost to local government because of state preemption. Estimate of \$2 million, ERCDC only.	Refinery siting should be a state responsibility.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
92. Criteria for new or enlarged tanker terminals SWRCB					X	Private sector would incur unknown increased capital costs.	Benefits unknown.
89-93 Policies for tanker terminals SLC		X				Minor cost to SLC, although may go to \$340,000 if aggressive program undertaken. Major cost due to Coastal Commission and Energy Commission involvement.	Duplicative layering of responsibilities.
94. Coastal agency role in LNG facility siting ERCDC		X				Increased cost to ERCDC. Costs reflected in Policy 88 above.	Statewide agency should have responsibility for siting in this area.
94-98 Policies for LNG facilities SLC		X				No new costs to SLC if minor augmentation made for tanker terminals.	
95. Criteria for siting and de- sign of LNG facilities SWRCB						Costs unknown.	The board currently has no policy on LNG facility siting.
98. Research and development per- taining to LNG safety ERCDC		X				ERCDC is currently conducting research and development in this area and will make recommendations to the Legislature January 1, 1977. Our current funding level is \$80,000.	Very beneficial to interests of the state.

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
102. Criteria for new or expanded coastal roads							
SMRCB	X	X		X		Increased capital and recurring costs to federal, state and local sectors.	Minor to significant benefits would accrue from additional protection of coastal wetlands and estuaries in California.
104b,c,d & e Maximize recreational and scenic value of Highway 1 and other coastal roads							
D.C.		X	X	X	X	Minor cost increases to provide additional fire protection may be incurred at all levels in the public sector and in the private sector. Economic impact on forest, brush and watershed resources will be minor if effective fire protection is provided. Minor increases in state and local taxes may be required.	Policy will provide for better recreational use of coastal highways. Additional fire risk will result.
105a Parking policy: Use shuttle from remote parking areas if possible							
DPR	X	X		X	X	Costs dependent upon degree of implementation.	
116-120 Water transportation policies							
SLC		X				Costs to \$150,000 annually if SLC required to increase involvement with Port grantees.	Costs to Coastal Commission would be greater. Potential conflict with federal Maritime Commission jurisdiction over ports.
119. Recommendation for navigational safety	X					DNOD indicates initial cost of \$205 million to establish system recommended by U.S. Coast Guard.	

## ANALYSIS OF COASTAL PLAN POLICIES

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
121-130 Policies for public access to coastline SLC		X				Substantial added cost to research, document, and litigate access rights. Enforcement costs would be added on top of these costs. Costs of an expanded program could exceed a million dollars annually.	
121a & b Public access to coast- line and establish a 145 coastal trails system D.C.		X	X	X	X	Minor cost increases to provide additional fire protection may be incurred at all levels in the public sector as well as in the private sector. Economic impact on forest, brush and watershed resources will be minor if effective fire protection is provided. Minor increases in state and local taxes may be required.	Policy will provide for better recrea- tional use of coastal highways. Addi- tional fire risk will result.
123c Provide blufftop paths and linear parks DPR	X	X		X	X	Could be \$2,500,000 annual cost to local agencies if they wished to participate in trails program. Should be state coordinated.	Relates to Policy 145 on Trails. Coordination needed at all levels.
123e Authorize state agency to ac- quire and maintain access- ways DPR		X		X	X	Additional authority needed for state agency.	
125 Provide lower-cost tourist facilities in the nearcoast area DPR	X	X		X	X	Low cost camping could be provided.	Increased recreation opportunities.

## ANALYSIS OF COASTAL PLAN POLICIES

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
130. Multiple public-oriented uses in major facilities ERCDC		X				No cost increase.	Will be done as part of ERCDC evaluation of siting applications.
134. Reserve shoreline areas for recreation activities that need access to water DPR	X	X		X	X		This policy could exclude recreation uses that are legitimate.
135. Restrict substantial altera- tions along the coast for recreation DPR	X	X		X	X		This policy could harm legitimate devel- opments. RV's are appropriate in cold windy areas.
136. Reserve upland areas for recreational support DPR		X		X		State and local moderate to high costs at im- plementation stage, assuming this applies to new projects only.	
137. Provide a variety of recrea- tional facilities near me- tropolitan areas DPR	X	X		X	X	Federal, state, local minor costs if low intensity recreation.	Standard policy for most recreation agencies.
140. Balance development with open space and recreation facilities DPR					X	Balanced costs. Local control required.	Private sector and government combination.

# ANALYSIS OF COASTAL PLAN POLICIES

Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
142. Limit access & recreational use where necessary DPR		X		X	X	DFG, DPR involvement. Standard practice on existing units.	
143. Restrict off-road recreation- al vehicles along the coast DPR	X	X		X	X		
144. Establish long-range pro- gram to protect recrea- tional resources DPR	X	X		X	X	Part of most existing programs.	
145. Establish a coastal trails system DPR		X		X		A \$10 million annual program for acquiring and developing recreation trails along coast should be initiated including cooperative projects with local agencies near urban concentrations.	Benefits would accrue to bicyclists, hikers and horse riders.
146. Accommodate new recreational boating facilities without degrading coastal resources DNOD		X		X	X	Major depressant to growth of recreational boating industry. Restricts potential for increased property tax to local government.	

## ANALYSIS OF COASTAL PLAN POLICIES

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
149. Encourage education on the coastal environment							
DPR		X		X		Costs indeterminate.	
SMRCB		X		X	X	Minor increased capital and recurring costs to federal, state and local government	Significant benefit.
150. Establish a coastal reserve system						A \$300 million bond program should be established to acquire the most endangered coastal reserve properties that have been identified. DPR, DFG, others.	Preservation of resources, recreation uses, educational and other values Resources Agency might take lead.
DPR		X					
150d Establish a coordinating committee to review acquisition and management of the reserve system							
DFG		X				Unknown minor annual costs. Resource conserving.	Protects estuaries and shoreline species but reduces public access. Existing law essentially covers policy. Vagueness of policy does not allow for cost evaluation.
150e Manage reserves for resource protection							
DFG		X				Unknown minor annual costs. Resource conserving.	Protects estuaries and shoreline species but reduces public access. Existing law essentially covers policy. No advantage to hunters and fishermen if department is not allowed to make decision as to whether hunting or fishing will be allowed in reserves. A conflict could develop between reserve system operations and DFG and F & G Commission.



Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
151. Protects historical and prehistorical resources DPR		X				A program for the systematic archaeological and paleontological survey of the coastal zone would cost \$127,500.	A survey based on this program will enable the establishment of programs to preserve and study endangered archaeological sites to greatly increase our knowledge of prehistorical resources. Tax relief portions could be a ballot issue.
D.C.							Williamson Act could handle.
152. Restore degraded coastal resources SHRCB	X	X		X	X	Significant increased capital costs to federal, state and local government and to the private sector.	Significant benefit derived from restoring wetlands, wildlife areas and public recreation areas.
DFG		X				Major unknown capital or annual costs from F & G Preservation and General Funds. Resource conserving. Growth retarding. Limits urban sprawl.	Protects estuaries. Encourages land conservation. Protects coastal lowlands but restricts addition of marinas. Would require tremendous undertaking by DFG if given authority to do so. Policy is vague as to whom would conduct the restoration work.
156. Use appropriate techniques for expanding public use of the coast D.C.	X	X	X	X	X	Private sector capital and operating costs could be increased through acquisition or less-than-free management contracts to provide expansion of public use of coastal timberlands. Policy would be resource and land conserving within coastal watersheds, but may be offset elsewhere. Policy would reduce local tax base in coastal areas.	Policy will protect marine resources, estuaries, forest and agricultural lands, shoreline, wildlife, and design quality. It will, however, restrict commercial and residential development, cause land use displacements and cause minor reductions in timber production.

## ANALYSIS OF COASTAL PLAN POLICIES

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
156. D.C. (cont.)							With respect to preservation and protection of forest and watershed resources, the least costly and perhaps most desirable, from a cost-benefits standpoint, are the proposed various less-than-free management contracts. Additional private sector cost increases are based on past economic impacts of timber acquisition by state and federal government.
159. Expand the authority of existing state acquisition agencies DFG		X				Unknown capital or annual costs. Resource conserving. Displaces local tax bases.	Protects valuable fish and wildlife habitat. Policy is in error in that DFG (WCB) has authority to acquire options. Section 1348 of F & G Code. However, the \$2,000 level would be desirable, but not enough. The limit should be raised.
160. Create an interagency coordinating council DFG		X				Minor unknown annual costs from F & G Preservation Fund. Resource conserving.	Recommends state agency coordination on purchase of coastal lands. Costs would be minor because priorities could be shifted to handle this slight proposed additional workload. Policy vague as to who will be the lead agency.

## ANALYSIS OF COASTAL PLAN POLICIES

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Policies	Location of Impact					Increment of Cost (Savings) and Nature of Economic Effects	Benefits, Disadvantages and Comments
	Fed.	State	St. Man- dated	Local	Private Sector		
162. Prepare subregional plans for some coastal areas DFG		X				Significant unknown costs to the F & G Pre-servation Fund. Resource conserving. Unknown significant local costs. (See policy 162d).	Protects coastal resources through coordinated planning. Cost estimates were based upon the fact that DFG would be called upon to provide input to plans. Past experience has shown that local governments have little expertise in fish and wildlife matters. Would benefit fish and wildlife by protecting habitat. Lack of data prevents determining costs.
162d Provide state funding for sub-regional planning programs DFG		X		X		Significant unknown costs from General Fund. Resource conserving. Reduce cost demand on F & G Preservation Fund.	Protects significant fish and wildlife habitat areas. Does not indicate if state agencies could be recipients of grants.

## ANALYSIS OF COASTAL PLAN POLICIES

### Footnotes to Policy Analysis

#### Footnote #1 from page 3

A recent opinion of the Attorney General (No. SO 73/17) indicates that an increased cost to local government is not state mandated if such cost can be financed from sources other than through an increase in property tax. In most instances, sewerage agencies, including general purpose local governments and special districts, have the authority to finance an increased level of treatment by an increase in special sewer assessments. Accordingly, if the legislation implementing the coastal plan mandated an increased level of treatment on sewerage agencies, the cost of such treatment conceivably could be financed by these sewer assessments and, therefore, there would not be any state mandated costs. However, it presently is difficult to anticipate all ways in which the successor coastal agency could mandate an increased level of service or new service on local governments and whether such increased level of service or new service could be financed under the present statutory authorizations for these special sewer fees. Consequently, while we believe that in most instances the increased level of service or new services mandated by legislation implements the Coastal Plan would not result in "state mandated" costs to local government, we cannot conclude categorically that this would be the result. While we have not indicated that there would be any "state-mandated costs" throughout the remainder of the present analysis, we do so with the foregoing understanding.

#### Footnote #2 from page 5

The estimated additional costs shown for these examples are based upon published cost curves (and other sources) for unit treatment processes required by the State Health Department for secondary treatment effluent (i.e., for effluent that has already received the level of treatment mandated by EPA for ocean disposal) that would be used for spray irrigation of food crops or in a nonrestricted recreational impoundment (Wastewater Reclamation Criteria, Title 22, Division 4, California Administrative Code). It is probable that most of the effluent from the cited wastewater systems, as well as much other municipal effluent from the Coastal Resource Management Area, would have to receive the level of treatment required by those reclaimed water uses if reclamation is mandated. Wastewater reclaimed for purposes other than those indicated above would not require treatment as extensive; effluent from many of the smaller municipalities in the Coastal Resource Management Area could perhaps be used for such purposes.

The federal and state grant funds available for building and upgrading treatment facilities are limited. The State Water Resources Control Board through its various policies and administration of the Federal and State Clean Water Grant Program has attempted to provide a statewide priority for distribution of these funds.

## Footnotes to Policy Analysis (continued)

Footnote #2 from page 5 (continued)

The principal impact of the Coastal Plan on the Grants Program would be the restructuring of the funding priorities established by the State Board with a definite bias toward the Coastal Resources Management Area. In essence such a change in funding priorities would result in a reduction of available funds for treatment works in non-coastal areas of the state such as San Francisco Bay, Lake Tahoe, and the Central Valley. Thus, the channeling of additional funds to coastal areas made necessary by the mandated water quality goals of the Coastal Plan would result in delays to many projects which are necessary to satisfy public health requirements and other concerns.

Footnote #3 from page 15

A principal role of planning under Section 303(e) is to identify past, present and probable future beneficial uses of the surface and underground water of the state and to specify water quality objectives which would maintain these uses. In addition, among other things, Section 303(e) plans will identify water quality problems associated with the disposal of municipal wastewater and recommend some possible alternative solutions to such problems that would be further analyzed under Section 201 planning.

Recently, plans in conformance with the requirements of Section 303(e) of the Federal Act and with state law were adopted by the regional board, approved by the state board, and approved by EPA.

In contrast with Section 303(e) planning, Section 201 planning is concerned with finding a specific solution to a specific water quality problem associated with the disposal of municipal wastewaters. Section 201 solves specific water quality problems by providing federal grants for the planning, design and construction of wastewater treatment facilities. Presently, nearly all the municipal wastewater treatment facilities in the state are at least in the planning stage and may have progressed to the design or construction stage.

Under federal law, the existing Section 303(e) plans will be updated by 1978 to conform with the requirements of Section 303(e) and Section 208 of the Federal Act.

For those areas in California which the State Board has identified as having complex urban-industrial problems, local agencies must prepare such plans. The scope of each plan largely will be determined by the environmental concerns in the particular area. For nondesignated areas of the state, the State Board will undertake planning under Section 208. Section 208 planning for nondesignated areas will not be as extensive as for designated areas because of the nature of the problems involved.

Regardless of the scope of Section 208 planning, it will not duplicate existing Section 201 planning.

It is highly unlikely that the Section 208 plans will be as all encompassing as the comprehensive watershed management plans contemplated by this policy. For example, the following issues have

COASTAL ZONE  
INFORMATION CENTER

